

Concerning the Placement of Gold in Close Proximity to the Living Pulp, and the New Gold Anchor Intermediary.

By ALLISON R. LAWSHE, D.D.S., Trenton, N. J.

As the days come and go new and saner methods of practice come forward to take the place of our old, empirical ones, and each year—I might almost say each month—we fill and treat teeth with a more exact and prophylactic science. We remedy still, but we also prevent. Not experience alone aids us, but divine imagination also, with its gift of anticipation, is leading us toward saner and better methods. But we have yet a little way to go before we attain in our daily work that perfect sanity and good sense which marks the efforts of those who have climbed the mountain to its dizzy summit. We lowly dwellers in the valley—we often know but do we always *do*? We sometimes preach, but do we always practice what we preach, for when both knowledge and imagination, precept and practice tell us that if we place huge gold fillings anchored by retaining pits into close proximity to a living pulp that that pulp will surely die. Is that sanity? If it is not, then why? Why do we continue doing so? Probably the answer is that no practical and effective method of protecting the pulp under large metal fillings and of anchoring gold fillings without retaining pits has, until the present time, been devised.

Describing the combination of cement and gold in his chapter on "Combination Fillings" in the American Text-Book of Operative Dentistry (E. C. Kirk editor), Dr. Dwight M. Clapp says:

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"The cement is placed in the cavity, and, while soft, pieces of some of the so-called 'plastic golds' are put into it; the surplus cement is carefully cut away, and, after waiting for that in the cavity to become so hard as not to break or crumble under pressure, the pieces of gold placed in the soft cement are thoroughly condensed. The filling can then be completed with the same or any kind of cohesive gold. . . . Too much stress cannot be laid on the desirability of this method for frail teeth. Especial attention is called to this combination of gold and cement for the six front teeth. In the teeth of young patients, and those having teeth of low-grade structure, there are often found large cavities that, if filled with gold alone, will in a few years, sometimes months, show discoloration around the fillings. If filled as above described, every vestige of decay having first been removed, *a combination is the ideal preservative filling, as far as present knowledge and facilities go.*"

Gold Anchor Intermediary.

That was written eight years ago, but it is as true today as it was then. However, we now have a material that is better for this purpose than cement—a material that is ready for instant use—that requires no mixing, that sets instantly, that is non-conducting, adhesive and anti-septic, thus forming the ideal "lining"; that can be manipulated with extreme ease and used under any kind of filling, that firmly anchors the first piece of gold upon which the rest of the filling may be packed without danger of loosening or dislodgment. That material is Gold Anchor Intermediary.

In a paper on "Hygienic Fillings," by Dr. Levi C. Taylor, of Hartford, Conn., read before the Northeastern Dental Association at Worcester, Mass., in October, 1902, and published in the *Dental Cosmos* for December, 1902, and May, 1903, Dr. Taylor says: "The sealing of the tubuli is the one important feature in the preservation of tooth structure. Fillings inserted in this way (cement and gold in combination as above) will make water-tight fillings, which are rarely obtained by gold alone, even by those of us who are desirous of doing our best. This is proved by the fact that so many discolor, sometimes slowly, sometimes by actual decay, at the lingual corner in approximal cavities and frequently on the face of a front tooth when a thin portion of the tooth remains." Again he says: "There is another feature in this method of filling worthy of mention here. The thermal changes so common when gold is placed in direct contact with the tooth are very largely overcome. . . ."

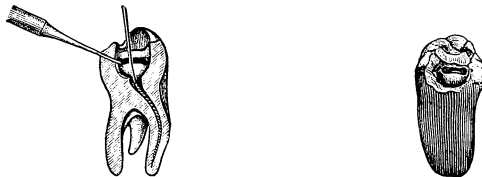
Every word of it is true, but let me say again, and with emphasis: We have now a better material for this purpose than cement. Gold Anchor Intermediary will do the work better and quicker; better, because

it is a greater non-conductor, better because it is antiseptic in its action, better because there is no acid to cause irritation in deep-seated cavities. It will do it in less time, for the reason that, as stated above, there is no mixing and the setting is practically instantaneous. Indeed, by its aid fillings can be inserted in far less time than all-gold ones require; there are no abominable retaining pits to fill. The material is composed of thymol, dammar, baric sulphate and oil of cloves. It is applied to the bottom of the cavity with a pellet of plastic gold, aided by very gentle heat. The preparation is about to be placed upon the market that the profession may benefit by it, for, the writer believes, its general use cannot but be a good step toward the attainment of that sanity in our operative work without which our success must be governed largely by chance and the good we do our patients necessarily tainted by a doubt.

Excision of a Portion of Dentine for Complete Exposure of the Pulp Chamber for Subsequent Treatment of Molars.

By T. C. TRIGGER, D.D.S., St. Thomas, Ont., Canada.

In order to successfully apply instruments and medicaments into the root canals of molars, easy access to them should be obtained. Many instances occur where free opening is not made, consequently great difficulty



is encountered by inserting instruments in a bent condition past an obstruction of tooth tissue, which is known as the dentine horn or fold. This fold of dentine which forms a roof over the pulp is the hardest portion of dentine in any part of the tooth. In fact, it resists the burr in its work as some sections of enamel. Anatomically, this cap is situated directly over the most vital portion of the pulp, and is dipped downward, serving a purpose, no doubt, for protection. Before this lump is taken away the patient will complain that something prevents the passage of the instrument into the distal canal of the lower molar. To remove this cap take a small 11-



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pound burr and drill a few lines, in a crescent form, as indicated in the illustration. At the extreme corners the drill will easily penetrate the spaces for the reception of the distal portions of the pulp. Carefully cut across as indicated, when this cap will be displaced in the form of a granule. By enlarging the orifice of the pulp chamber in this manner it will save the difficult and disagreeable method, usually employed. Generally after an immediate medicinal devitalization there is considerable soreness when any undue pressure is applied to the exposed portion of the pulp, but by cutting this away it will prevent any such difficulty. It is not necessary, always, to make a complete excision, but by carefully prying upward, using the base of the cavity as a fulcrum, the removal is easy. By removing this small portion of dentine the pulp remains undisturbed, giving a free access for its extraction and subsequent treatment of the root canals.





The X-Ray and High Frequency Currents in Dentistry.

By SINCLAIR TOUSEY, A.M., M.D., Surgeon to St. Bartholomew's Clinic, New York.

Read before the New Jersey State Dental Society, July, 1905.

The value of the X-ray in diagnosis depends upon the fact that it penetrates denser substances less readily than those not so dense. In a picture of the teeth for instance, we may be able to see the flesh of the lip or cheek, the gum, the alveolus, the tooth and its roots and even the pulp canal and a pulp-stone if one be present. Metallic fillings show up as very dense masses. Root fillings show well and one of the uses of the X-ray is to determine the condition of a root-filling, in a tooth under suspicion.

Two ways of X-ray examination are available in dentistry as elsewhere. Dental radiography is the making of an X-ray picture of the teeth upon a sensitized photographic film or other surface, usually held inside the mouth. Dental fluoroscopy has been rendered practicable by a little invention of my own. A little fluoroscope shaped like a mouth mirror is introduced into the mouth and the image or shadow of the teeth cast upon it by the X-ray is directly observed. Just as in an examination of the forearm, the fluoroscope gives a direct view and is sufficient for a diagnosis in many cases. The picture, however, shows finer details and furnishes a permanent record.

X-ray treatment is of chief value in pyorrhea alveolaris and cancer. In the first class of cases, it is best to combine it with the application of high frequency currents. In treatment, as much if not

more than in radiography, success depends upon the application of the proper quality and strength of X-radiance for the proper length of time. It is now well recognized that there are a great many different wave lengths of the X-rays and just so many different degrees of penetration

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and different degrees of effect upon living tissues and photographic plates. With the same strength of current but a high vacuum the same X-ray tube may give a ray of great penetration and very slight chemico-biologic effect; and with a low vacuum it may produce a ray of slight penetration with great chemico-biologic effect. The quality of the radiance depends very much upon the degree of vacuum in the tube. This is adjustable and should be regulated to the proper point for each individual case.

For the treatment of pyorrhea, the vacuum should be quite low, the ray not penetrating more than one or two thicknesses of tin foil, aluminum or platinum in the different radiometers, nor more than about half an inch or an inch of flesh. The same degree of vacuum is suitable for cases of epithelioma of the mucous membrane, but for deeper seated tumors and especially for those of the jaw, a ray of moderately great penetration (about No. 6 of the radiometer scale) is required.

The strength of the radiance is so variable with different types of apparatus that the proper lengths of time and strength of current and distance from the tube require judgment based upon experience. Several guides are useful. One is a distance of nine inches, and an exposure of four minutes for pyorrhea, or eight minutes for cancer, with a strength of current which will show bones of the hand faintly at a distance of two feet. Stronger currents require shorter exposures and the ampere-meter or the primary, and the milliamperemeter or the secondary current furnish approximate guides, provided the tube is giving out the proper quality of radiance. All these enable one who is a good judge of the effect of the X-ray to apply it safely and with benefit. For one who depends on printed directions, however, there is only one safe measurement to use, and that is Holz knecht's Chromoradiometer. A sensitized wafer is placed at the same distance from the tube as the part to be treated, and when it has changed color to No. 1 of the Holz knecht color scale, it indicates that one Holz knecht unit of radiance has been absorbed, and this is the proper dose for application two or three times a week for pyorrhea. For cancer, similar applications may be made, or a single heavy application of four to eight Holz knecht unites and then no treatment until after the development and subsidence of the reaction.

The results in pyorrhea are almost invariably immediate relief of pain and a prompt improvement in the condition of the gums.

In many of the cases referred to me the dentist has said at the end of two weeks that the teeth were in better shape than they had been in for six months. Case after case has improved to such an extent as to be regarded by the patient as practically cured and treatment has there-

fore been abandoned. With clinic patients this is only to be expected, but with private patients it is too bad that they should not expend the additional time and money required to change relief into permanent cure, combined with the proper mechanical and chemical treatment by the dentist.

The X-ray and high frequency currents will cure most cases of pyorrhea. The only case I have had which did not respond fully to treatment, was a young lady, who took absolutely no exercise; did not walk two blocks a day while at her home in Mexico. She was anæmic, and the gums looked cartilaginous, as if they would not bleed even if they were cut with a knife. The affected teeth were very sore and rather loose at first, and the gums were ragged and ulcerated. There was marked improvement from the start, but it reached only a certain stage. There remained some soreness and looseness and a cartilaginous swelling of the margin of the gum, although the flow of pus and the ulceration had disappeared. It was concluded that exercise and tonics and country air would do more good than local treatment. Her dentist, Dr. J. Morgan Howe, of New York, tells me that she returned to her old kind of life in Mexico and that she will probably lose the affected teeth.

This paper does not seek to give an exhaustive account of the uses of the X-ray in dentistry, but merely an outline thereof. And the easiest way will be to give a running commentary on the lantern slides which will now be thrown on the screen.

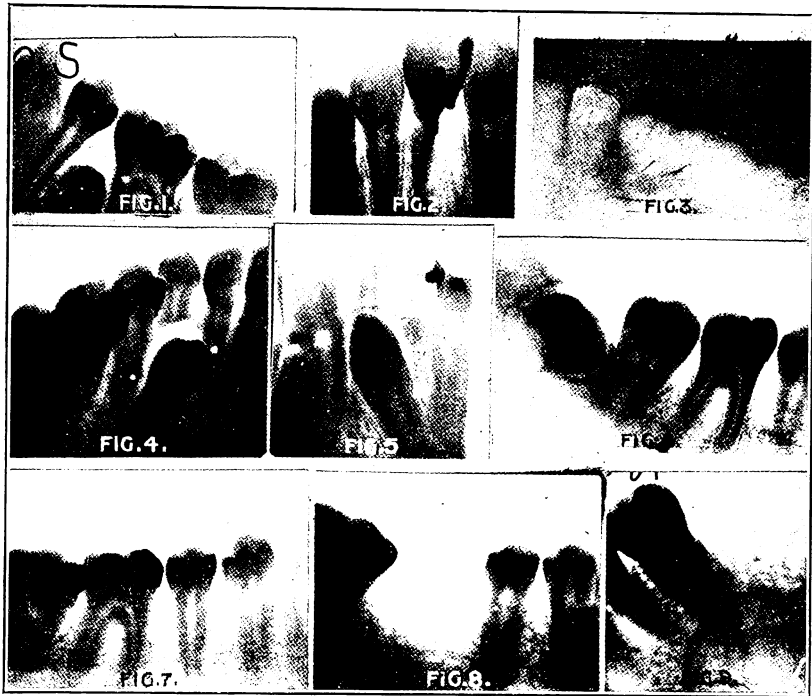
This picture was made upon a triple-coated process emulsion (the slowest photographic film made) celluloid film. This was cut to a size of one inch by one and a half inches, wrapped in black paper and thin rubber dam, and held inside the mouth in a plane parallel with the long axis of the teeth. The X-ray tube was at the same side of the face at a distance of about ten inches measured from the photographic film to the disk in the center of the X-ray tube. A twelve-inch X-ray coil was used with a liquid interrupter, a primary current of 110 volts and eleven amperes and a secondary current of two milliamperes. The X-ray tube was a heavy target Miller, fifty centimeter tube with rather a high vacuum. Spark equivalent five inches. Radiometer No. 8. The time of exposure was twenty seconds. The X-ray tube was enveloped in a Friedlander shield opaque to the X-ray and protecting the operator and patient from the X-ray except at the part of the face desired to radiograph.

This technique has been described in full because experience with a great many cases has shown it to produce successful pictures and to

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be safe to patient and operator. No more than six such pictures should be taken on one day and these should not all be the same part of the face.

The case is that of a boy of thirteen, a patient of Dr. De Sola, with both lower second bicuspid unerupted. They could be readily seen with the dental fluoroscope. The permanent first bicuspid had erupted at the usual time and were such large strong teeth that it was thought before the X-ray examination that they were probably second bicuspid and that the space to be made for the unerupted teeth was between them



and the canines. The first glance with the fluoroscope showed that the unerupted teeth occupied the space between the molars and the bicuspid already erupted. The picture shows the unerupted second bicuspid lying between the roots of the first bicuspid and the first molar. The whole length of the first bicuspid is shown, its enamel being delicately outlined, also its root canal with the patent foramen so often seen in young teeth. The first molar is seen with two fillings, its enamel and pulp cavity and root canals clearly outlined. The reticulated structure of the alveolar process does not show as clearly as it would in the

denser bone of older persons but the bony wall of the alveolus shows very well. The crown of the second molar is seen with its four cusps and the outline of its enamel. The number twenty-six was photographed on the film at the same time that the picture was made. Little figures made of lead fuse wire are pasted in the outline of the film pocket.

In a case referred by Dr. Allen of Brooklyn, **Fig. 2.** an upper central incisor had been knocked out when the girl was about nine years old. It had been opened, the pulp extracted, the canal filled and the tooth replaced inside of half an hour. For ten years the tooth looked well and gave good service but after that time began to rotate and an examination was made to determine the amount of absorption which had taken place. There was found to be still about a fourth of the thickness of the root left and the tooth will be preserved for several years.

The next picture was taken direct upon bromide paper. This process gives a finished picture in five minutes without requiring a photographer's dark room and is therefore very convenient. It is suitable only for gross lesions like unerupted teeth but as will be seen from the present picture, it is lacking in the fine detail obtainable by the film method. The picture shows the flesh of the lips and cheek. The boy was a patient of Dr. Kimball and had developed a horizontal swelling along the gum below the temporary teeth which seemed like a permanent bicuspid erupting in a horizontal position. The question to be decided by the X-ray was which end of the tooth was the crown and which the root. The picture showed that the horizontal swelling was due to three teeth preparing to erupt simultaneously and all in normal position.

This shows an unerupted canine in a girl of **Fig. 4.** fifteen. The temporary canine is still in situ but its root has been partly absorbed. The light area about the crown of the unerupted tooth represents the bony sac which is always present. The marking at the top of the picture represents the normal bony structure. It is connected with the pneumatic sinuses of the maxilla and is sometimes misinterpreted as indicating an abscess past or present.

This patient of Dr. Haas, a girl of seventeen, **Fig. 5.** had an unerupted superior canine which was readily located with the dental fluoroscope.

The next picture is of a young lady of seventeen, a patient of Dr. Hasbrouck. She had suffered night and day for four days from pain in the side of the face. Of course the possibility of an impacted wisdom tooth

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at once occurred to the dentist and she was sent for an X-ray examination. The dental fluoroscope enabled an immediate report to be sent to Dr. Hasbrouck by telephone and when the picture was developed it was found to be a successful one. The treatment of course was chiselling through the bony sac and removing the tooth. This the doctor did under nitrous oxide. In the picture we can see the unerupted canine lying in its bony sac and driving horizontally against the root of the second molar. The structure of the jaw and alveolar process and the bony walls of the alveoli are well shown as are also the two molars and the second bicuspid teeth. The pulp cavities, fillings and layer of enamel show distinctly.

Fig. 7. This is a view of the same patient a little further forward. The layer of enamel upon the second bicuspid is beautifully shown. It is only fair to state that every picture which bears my signature is exactly as made by the X-ray. None are ever touched up in any way.

Fig. 8. This is a patient of Dr. Ros. A man of forty-two with a chronic fistula in the region of an extracted first molar. The examination was made to determine where there was a broken root. There was none but some slight necrosis is indicated which it was thought could be cured without operation.

Fig. 9. This is a lady of forty-nine sent by Dr. Hasbrouck for examination for unerupted superior wisdom tooth the suspected cause of pain and swelling. Such had been the case on the other side twelve years previous, but on this side the picture showed there was no wisdom tooth at all. The root of the first molar extends far into the antrum which is normal. Traces are visible of the alveolus of the second molar which was extracted two years ago to make room for the supposed wisdom tooth.

Fig. 10. This is a lady aged thirty-five, a patient of Dr. Wheeler. A number of teeth had large fillings and porcelain crowns and were the seat of neuralgia. This picture showed no anatomical basis for the pain.

Fig. 11. This is another view of the same case.

Fig. 12. And this is still another. Excellent root fillings are seen in the tooth with a pivot and also in the adjoining tooth.

Fig. 13. This is another view of the same patient showing an upper central incisor with pericementitis. This is indicated by a swelling upon the root.

Fig. 14.

This is a lady of twenty-nine, a patient of Dr. Goldsmith. Both upper centrals and left lateral incisor pivoted eight years ago. Gums a good deal inflamed and blue, and a fistula above the left central. The picture shows an abscess about the roots of each central incisor with some absorption of the apex of the root and of the alveolar process around the apex.

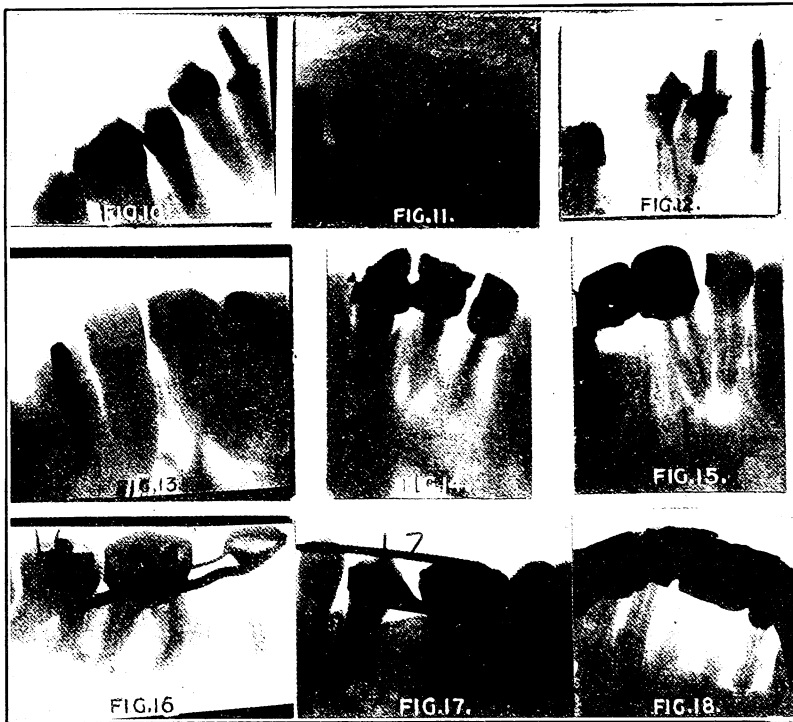


Fig. 15.

This is a lady of about thirty-five, sent to me by a New York dentist. There was a fistula in the middle of the roof of the mouth which had formed a week after the extraction of a first molar tooth. The region of the first molar and also a central incisor which had lately been capped in connection with some crown and bridge work were under suspicion. The picture showed an abscess about the root of each central incisor and absorption of the apex of one.

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Fig. 16. This is a young lady of seventeen, a patient of Dr. Gillett. Both lower second bicuspid were absent. A dentist in Paris had extracted the temporary teeth a year ago without taking the precaution to make an X-ray examination. The picture shows that no germ of the permanent tooth is present. Apparatus for approximating the teeth is also shown and beautiful detail in the teeth and jaw.

Fig. 17. This is the other side of the same patient.

Fig. 18. Crown and bridge work in a lady seventy-five years old, a patient of Dr. Dailey.

Fig. 19. This is a picture taken by a method which is partly attributable to Kienböck and Holzkecht of Vienna, but a little invention of my own makes it practicable. A large film is placed horizontally in the mouth and the

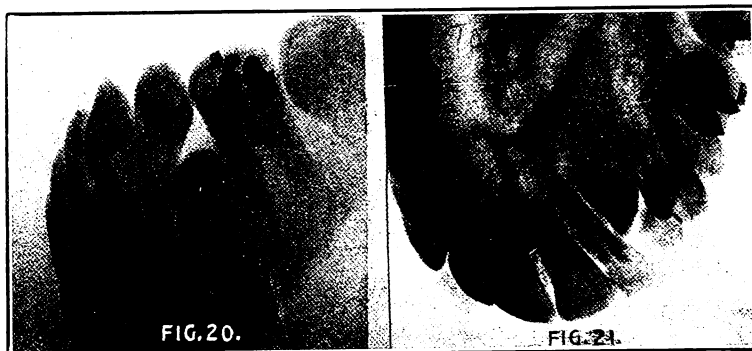


X-ray tube is placed at the proper angle above or below the plane of the film. The major part of the dental arch may be shown in one picture. This case is one of unerupted superior canine tooth in a young lady of nineteen, a patient of Dr. Goldsmith. The peculiar structure of the upper jaw is better shown in this picture than in the smaller ones.

Fig. 20. This is another by the same method. The patient, a boy of thirteen, was brought by Dr. De Sola for examination for unerupted lower second bicuspid which were readily seen with the dental fluoroscope. The picture shows one of these teeth and shows the entire vertical width of the lower jaw, and excellent detail in some of the teeth. The curvature of the dental arch causes an overlapping of the teeth at the front of the picture.

Fig. 21. This is a young lady of seventeen, a patient of Dr. Colburn, with an unerupted superior canine tooth, the temporary tooth being still in situ. The picture was taken by this new method of mine.

Fig. 22. A film measuring two and three-quarters by about three and one-half inches is wrapped in black paper and placed in the film carrier which is shown in the picture and which is of my own devising. The pocket in which the film is held is of rubber-dam. About an inch in front reached by the incisor teeth when the film carrier is held in the mouth an aluminum pointer is pivoted. This rod is always at the proper angle either above or below the plane of the film and swings laterally over a scale upon which is printed a diagram of the dental arch. When it is opposite the proper tooth on the scale the rod points directly at spot where the cen-



tral disk of the X-ray tube should be placed in order to make a picture in which that tooth shall be the central figure. The contrivance enables one to get a true picture without elongation or foreshortening of the image.

Fig. 23. This is another view of the film carrier.

Fig. 24. This is a patient having a radiograph of the upper incisors made by the process. The tube is enveloped in a shield which is opaque to the X-ray except at one point. This is very essential to the safety of both patient and operator, and should be used in every application of the X-ray for treatment or examination. It dispenses with the disagreeable and inconvenient process of covering the patient with sheet lead except at the portion to which the rays are to be applied. And when it is remembered that repeated even though short and mild exposures for several months will produce sterility the importance of the operator using this

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means of protection from the X-ray is readily understood. Special safety X-ray tubes are now made entirely of lead glass, except at the point whence it is desired that the rays should be directed upon the patient.

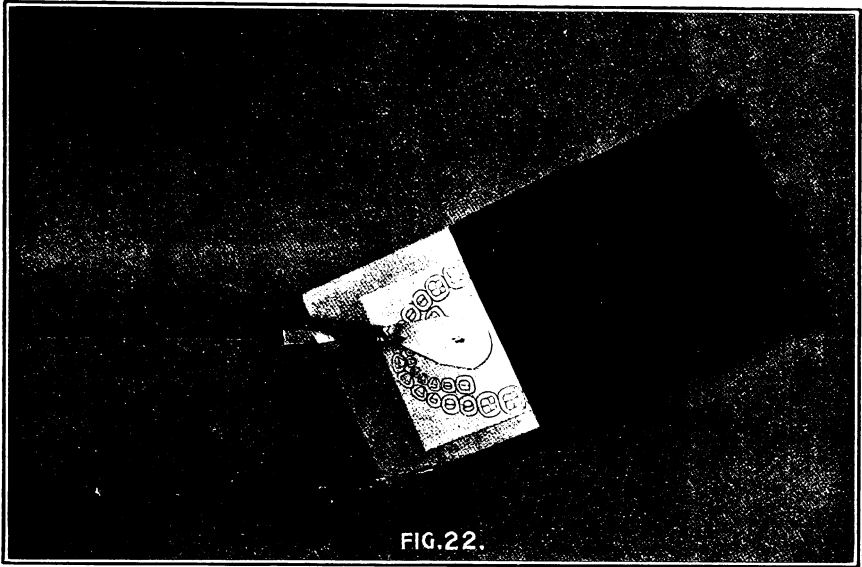


FIG.22.

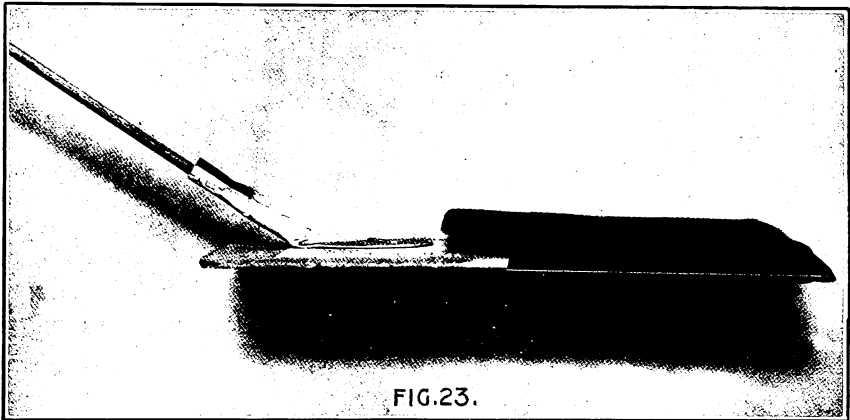


FIG.23.

Fig. 25. This is an excellent picture of a pair of hands of a patient after electrical treatment for chronic rheumatism. It shows the way the hand should look in the fluoroscope when the tube is giving the proper ray for mak-

ing a picture. This is quite a low vacuum as the flesh casts a perfectly distinct shadow. This degree of vacuum is the one which is suitable for treatment for pyorrhea and epithelioma. A lower degree of vacuum would show the whole hand as a black shadow, the flesh not being penetrated and the bones not showing. There would be no temptation to use it for taking a picture because it would result in absolute failure. There is a temptation however to use a higher degree of vacuum and this will show the flesh of the hand perfectly transparent and the bones so transparent that their image is a pale gray instead of black. Such



FIG. 24.

a ray is proper for treating deep-seated cancer, but when used for radiography it produces pictures which though often presenting good detail are lacking in contrast. X-ray pictures lose very much in the half-tone process of reproduction for magazine illustration, and a picture which lacks contrast is almost worthless for that purpose. The impression must not be given however that the hand should be used in a routine way for testing the degree of vacuum and regulating the tube accordingly. That is very dangerous, and was the mistake made by the early X-ray operators whose sad experience we have all read about. Various instruments of precision, the spintermeter, the milliamperemeter and

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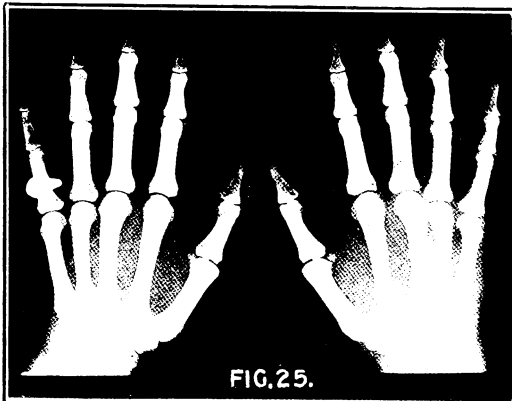


FIG. 25.

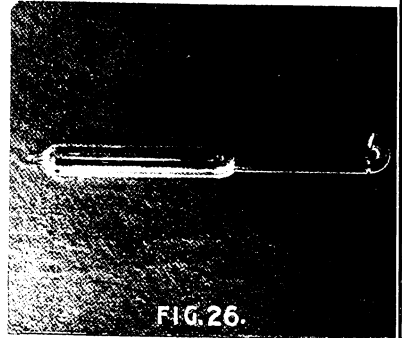


FIG. 26.

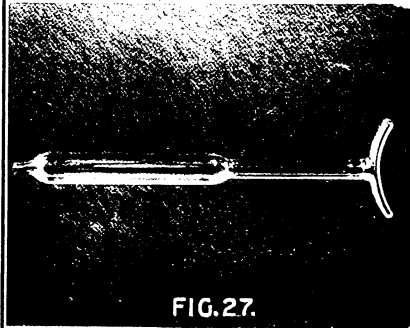


FIG. 27.

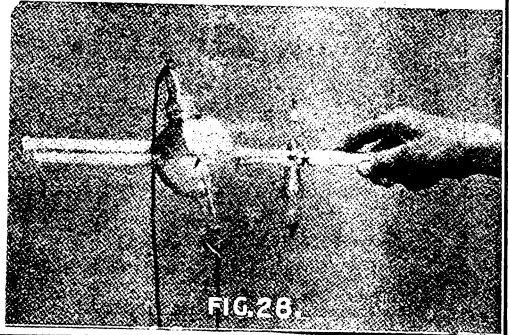


FIG. 28.

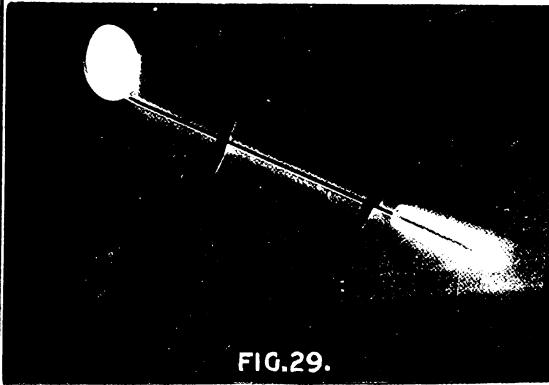


FIG. 29.

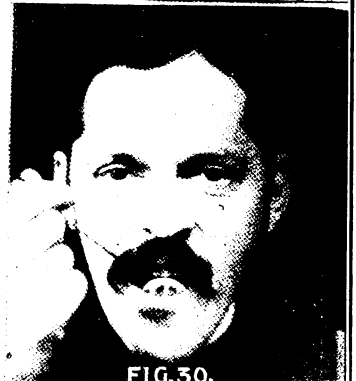


FIG. 30.

various types of radiometers are now used for testing the quality and intensity of the ray without using any part of the body as a test object.

This is a vacuum electrode for applying high frequency currents to the lingual aspect of the gums in pyorrhea. The shaft is insulated so that

the lips do not receive the current and it can be held by the patient himself. As will be demonstrated in a few minutes, the tubes become filled with waves of violet light, and a current of seventy-five to one hundred and twenty-five milliamperes is applied. This is vastly stronger than can be safely applied in any other way and is accompanied by none of the sensations produced by ordinary electric currents. The power is obtained from an X-ray coil with a combination of Leyden jars and wire spirals called the Oudin resonator. The beneficial effect is partly from a local stimulant action but there is also a constitutional effect upon the oxygen carrying property of the blood and upon the processes of metabolism. Ozone is liberated in the tissues by electrolysis and assists in the local beneficial effect and so does the invisible ultra violet light generated by the tube.

Fig. 27. This is another form of Leroy Satterlee electrode for high frequency currents; for application to the front of the gums.

Fig. 28. This is my own X-ray tube for the treatment of pyorrhea, and was one of the earliest tubes to be made of lead glass. This is colorless and perfectly transparent but is opaque to the X-ray. The tube has an insulated glass handle by which it is held, and the end of the cylindrical prolongation opposite the anticathode is made of glass which transmits the X-ray and which is shaped for application directly to the gums. The unipolar X-ray tube of Dr. Sterne which will be demonstrated later is suitable for application to the lingual aspect of the gums or to any other part of the interior of the mouth or pharynx as in cases of cancer.

Fig. 29. This is my little apparatus for the direct examination of the teeth with the X-ray. It is called the dental fluoroscope and is shaped like an ordinary adjustable mouth mirror. Instead of a reflecting surface it has a sheet barium platino cyanide screen such as is used in the ordinary fluoroscope for looking at the bones in one's hand. This chemical surface is mounted between two thin sheets of glass so that the entire disk is transparent to the X-ray. It is placed inside the mouth in such a position that one can see the shadow or image of the teeth cast upon its surface. As it is not enclosed in a dark box like the ordinary fluoroscope, it is necessary that the room should be darkened. It enables us to recognize gross lesions at a glance but the detail of structural changes require the longer process of making and developing a picture.

Fig. 30. This shows one use of the dental fluoroscope. The fillings shown in these lower incisors are let into the top of the teeth and do not show in front



at all. The X-ray image of the fluoroscope shows the depth to which they extend and even the little pits used as anchorages. The position of the X-ray tube in this case was in front of the patient at a level with the point of the chin. This is the last of the slides brought with me and I shall now be glad to demonstrate some of the apparatus already described.

Food in Its Relation to Teeth, Their Sockets and Adjacent Structures.

By A. W. HARLAN, M.D., D.D.S., New York, N. Y.

Read before the New Jersey State Dental Society, Asbury Park, July, 1905.

"Eat of what God hath given you for food."—THE KORAN.

"Animals feed, man eats; the man of sense and culture alone understands eating. The fate of nations depends upon how they are fed."—BRILLAT-SAVARIN.

The food question and the dietary question have received, during the past few years, a great impetus through the experiments of the United States Government in feeding preserved foods* to a certain number of volunteers, and the additional experiments conducted at Yale College by Professor Chittenden, with a detachment of United States soldiers, for a period of six months, a squad of Yale athletic students, and several of the professors and teachers, including Professor Chittenden himself.

These experiments were not conducted to prove anything more than to determine how the equilibrium of the body might be maintained on a much smaller diet than that called for by the generally accepted figures upon this subject. With the exception of the teachers, most, if not all, of the men were under thirty years of age. They were under constant supervision and the food was all accurately weighed, analyzed, and then eaten with absolute regularity. The excretions were all collected separately, analyzed and accounted for. This great care disclosed that a smaller quantity of protein was needed and consumed than the tables of Voit, Duckworth and others say is necessary. None of these men did much manual labor during the experiments, save the work in the gymnasium, and the care of their rooms, with one hour of enforced exercise. At first nearly all of them lost in weight, but after a few weeks the reduced weight was maintained with great regularity. None of the men

*Preserved with borax or boric acid.

were ill, and they did not complain of lack of variety in their food, nor did they seem to miss the larger quantity of food formerly consumed.

These experiments proved that it is not necessary to consume so much food, especially of the proteids. It did not prove, however, that vegetables or a vegetarian diet is best for man. These experiments have no direct bearing upon the question before us today, because we are arguing for use of the teeth upon food that requires for its thorough digestion and assimilation perfect mastication. Accompanying this paper will be found tables of food values.

**The Best Food
for Man's Needs.**

A man's food, if he expects to accomplish much mentally or physically, must be chosen for definite purposes—to repair waste and maintain his muscles, nerves, bones and blood in the best possible condition to enable him to think and act to his fullest brain capacity. In consequence of the needs of the matured physical organism, that food is best for man which will not distress him in his mind nor be revolting to his taste. It must be chosen for bodily repair as well as exercise of the jaws and teeth, and the muscles concerned in the masticatory and digestive acts. Foods or foodstuffs that are liquid or semi-liquid are not intended for any persons except infants and invalids, and edentulous persons unable to wear artificial teeth, and even then only for limited periods.

"Nature produces no food that should be swallowed without mastication, when eaten in its elementary state. She produces no soup trees, gravy vines, mush plants nor cook stoves. Elementary food must be masticated." (This does not refer to milk.)—CHRISTIAN.

Milk even is not the ideal diet for a child above two years—most children need food that can be chewed and ground into a pulp.

"Nearly all foods (not milk or grape juice) thrust into the stomach without mastication do not excite a sufficient flow of gastric juice."—PAWLOW.

"It is estimated, and perhaps within the limits of truth, that 500,000 infants die in this country every year through consumption of adulterated or unfit foods. Much spoiled grain, it is said, enters into the composition of many of the cereal foods, and the temptation to perpetrate fraud is as great here as in any other field of business activity."—SPACH.

The question of food, and pure food for the many, is one of such importance that the daily press, legislatures, and Congress itself are all becoming active in search of it.* Even the chefs of hotels and restaurants are discussing this question, and laws against food adulteration have been passed in many, if not all the States; and there is also a gen-

*Daily paper, July 6, N. Y. *Herald*.

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eral law for the whole country now in effect, which is being enforced where malefactors can be detected and convicted. The rich and poor alike need good food, properly prepared, so that the whole nation will be improved both mentally and physically by the use of proper food.

This profession cannot neglect such a vital question, and the forty thousand dentists who come in contact with two or three hundred thousand people daily must be the teachers of dietetics and everything connected therewith. The physician sees the infant from birth to three or four years of age much oftener than the dentist, but after that age is reached the dentist has nearly supreme control of the organs of mastication, and he would be neglecting his opportunities who did not sufficiently impress parents and children with the necessity—the absolute necessity for use of the teeth, and guide them in the selection of food that must be chewed and ground between the teeth before it is swallowed.

From the initial moment when man enters the world he is in need of food. For a few months mother's milk or cow's milk suffices, but a time soon comes when there are teeth in the jaws, and the nature of the food is changed to give them exercise and thereby aid digestion.

"Soft, mushy foods are responsible for the woeful decay of teeth, which is such a conspicuous mark of civilized man. Nature will not keep alive nor produce, generation after generation, any part of the anatomy that is not used. Her system of economy is perfect."—CHRISTIAN.

Dr. E. A. Bogue says: "Civilization indulges in soft food, cooked until it is softer."

"Nature is a perfect economist. If the teeth are not used, she will refuse to keep them in repair; she will allow them to decay. She presumes that you do not need them because you have refused to put them to that use for which they were created. So long as people subsist upon soft, cooked, mushy foods, they cannot expect to have good teeth. This is one of the greatest arguments against the baneful habit of cooking and in favor of elementary foods."—CHRISTIAN.

All young animals as well as children are fed upon milk, but as soon as they erupt teeth the diet should be changed to give exercise to the teeth and furnish masticatory exercise for the muscles of the stomach, as well as those of the alimentary tract.*

Man in his primitive state subsisted on flesh, fish and foods which he found in roots, grains and fruits. See history of the inhabitants of Polynesia, the Ladrões, Carolines, Friendly, Tongalese, New Guinea, Hawaii, Fiji, Gilbert, Marshall, Iceland, Greenland, etc. Even the

*Animals are weaned by force if necessary.

monkey in a natural state eats first, animal food, then nuts, roots and vegetables, according to the productiveness of the country of his habitation.

"When food is taken into the mouth the digestive process has its beginning in the mastication, or grinding and crushing, of the food by the teeth. To this end it is essential, first of all, that the teeth should be competent to perform their office, or we shall find that the subsequent offices will be interfered with. *Teeth must be sound, free from decay and from decomposing matter.*"—HOY.

Perfect mastication is the surest means of avoiding the habit of over-eating, which is so disastrous to the health and so common among civilized people.

"If physicians could be got to realize the importance of providing the jaws, teeth and the muscular coats of the digestive tract with adequate work, an untold amount of disease and suffering would be averted."—CAMPBELL.

"Food must contain a certain and considerable amount of indigestible, innutritious and unabsorbable matter."—WALLACE.

In other words, fodder or husk to clear out the intestinal tract.

"Before primeval man had learned to cook he subsisted largely on raw grains, seeds and roots containing starch. The jaws and teeth were highly developed, and mastication and insalivation were very important functions in food absorption. The mouth was then a veritable mill for grinding and comminuting these substances, and in a certain sense the action of the saliva with its diastase took the place of cooking, the raw starch being changed to soluble starch, dextrin and certain forms of sugar. At the present day, however, the digestion of starch begins in the kitchen, for the greater portion of starchy food is cooked when served, and is thereby rendered so soft that mastication and insalivation are much less needed. It would, however, be a great mistake to neglect to chew these foods, for deliberation in eating is a great advantage."—PATTEE.

Starch is of great practical use, for it is more digestible than fat, and when combined with protein it appears to aid the digestibility of the latter; the starch which escapes digestion in the stomach ferments in the intestines, forming certain acids. This acid fermentation is known to check the putrefaction of the undigested protein and vice versa. This is the true reason of the utility of a mixed diet and the supposed needs of the organism.

"On entering the mouth the food, if solid, comes under the action of the teeth, by which it is cut, torn, bruised and ground by a finely mechanical action until the complete insalivation."—SMITH.

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It is not necessary to chew olive oil or butter or fat, as there is no mouth or stomach digestion, such substances being emulsified so that they can enter the circulation with little or no change.

Diets and Dietaries.

Some governments in constituting dietaries for soldiers in times of peace make them only barely sufficient to sustain life, forgetting that when the soldier goes into the field he needs teeth, eyes, nails, bowels, and, in fact, all the strength for necessitous endurance. Managers of prisons are guilty in this respect also. Sailors and marines do not fare so badly, as there is always a small surplus of tissue builders in their diet.

Dietaries must be based upon the theory that all organs of the body must be used. The cost of medical attendance, medicines and nursing and the loss of time of soldiers and prisoners, when ill from too little food, more than offsets the extra cost of additions to a correct dietary. Many times more care and attention is given to the feet than the teeth, stomach and bowels. The teeth must have something to exercise upon, and the whole alimentary tract must receive cellulose and other indigestible fiber to produce regular and rhythmical movement of the bowels. Children above two years of age must have something innutritious to masticate to permit of symmetrical growth.

To say that a certain amount of food, properly masticated, will sustain life, is not enough. There must be a surplus to allow for miscalculation in quantity, change in labor or climatic changes.

AVERAGE DAILY DIET OF THE PROFESSIONAL MAN, THE SOLDIER, AND THE ATHLETE.

PROFESSIONAL MAN.	Grams.	THE SOLDIER.	Grams.	THE ATHLETE.	Grams.
Coffee	175	Banana	141	Banana	94
Cream	22	Butter	55	Cream	150
Sugar	44	Sugar	80	Sugar	56
Iced tea	250	Cream	155	Coffee	450
Boiled potato	90	Bread	60	Wheat roll	53
Wheat gems	47	Coffee	450	Butter	28
Butter	29	Bread	21	Soup	150
Roast lamb	9	Soup	247	Farina croquette ..	100
Vanila eclare	47	Fried potato	222	Fried sweet potato..	117
Lamb chop	32	String beans	65	String beans	75
Asparagus	49	Consomme	150	Syrup	50
Creamed potato ...	107	Bread	45	Bread	36
Bread	35	Spinach	200	Hamburg steak.....	53
Lettuce and orange		Potato	150	Potato	250
salad	150	Pie	103	Spinach	100
Cream cheese	12	(Three meals daily.)		Bread	55
Crullers	21			Apple Pie	142
Fuel value of food					
(in large calor-					
ies)	1,454		2,676		2,686

AVERAGE DIETS APPROVED BY THE UNDERMENTIONED AUTHORS.

	Moleschott.	Ranke.	Forster.	Haltgren & Lungren.	Atwater.	Shuchard.	Schmidt.	Voit.*	Gautier.†
	Grams								
Proteid	130	100	131	134	125	114	105	145	135
Carbohydrates	550	240	494	523	400	551	541	500	750
Fats	40	100	68	79	125	54	63	100	100
Fuel value (Calories)	3,160	2,324	3,195	3,436	3,315	3,229	3,235	3,574	3,876

It will be seen at a glance that these are from one-half to three-fifths larger than Chittenden's.

Feeding an Army.

The feeding of an army is today a solved problem. As proof of this let me read "the problem of feeding the Japanese forces is rendered very much easier by the composition of the rations, which do not include bread. The rations in 1900 were made up as follows—they are the same today, with a slight increase of meat: Rice, 900 grammes (100 grammes equals 3.2 ounces); fresh meat, 400 grammes, or 200 grammes of salt fish, or 300 grammes of dried fish (these quantities were increased by 70 grammes per day when the troops were on the march); fresh cabbage, 400 grammes, or 150 grammes of dried cabbage; tea, 15 grammes; vegetable sauce for seasoning the rice, 10 grammes; arrac, 20 centiliters. The commanding officer can order as extras 20 grammes of sugar per day and ten cigarettes and five eggs per week.—*The Mail*, London.

Other questions come into consideration of the methods of preparing foods.

Striking evidence was given before the Royal Commission on the ‡Care of the Feeble-Minded by Sir James Crichton Browne, the Lord Chancellor's Visitor in Lunacy.

Sir James said that there was reason to believe that 30 per cent of the population were still living in poverty and were ill-housed, ill-clothed and under-fed—conditions which favored mental degeneration.

He felt that a large amount of mental defect was due to insufficient and improper feeding in infancy and childhood. Natural nursing had gone out of fashion, and many of the condensed milks and proprietary foods were quite unsuitable and harmful. Babies fed on them might look plump, but they were pale and flabby, and often suffered from rickets.

*Soldier on active service.

†Workman—eight to ten hours per day.

‡May 26.

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He believed that the effects of alcohol in the production of mental defects had been exaggerated, and did not believe that in the causation of more than 15 per cent of cases of "idiocy and feeble-mindedness had alcohol taken any part."

The witness added that the late Professor Laycock, of Edinburgh University, used to divide idiots into two classes—poverty idiots and luxury idiots. In the case of the latter the causes of mental degeneracy were indolence and self-indulgence through many generations with "in and in" breeding.

The persons thus afflicted were called by Professor Laycock "spoon-bill" idiots, and he used to point out that they were the type represented in *Punch* as "aristocratic noodles."

In this connection read what Professor Maxwell said in Asbury Park on July 5: "When I look upon the anæmic faces and undeveloped bodies that mark so many of the children of the tenements, when I read of the terrible ravages of tuberculosis in the same quarters, I cannot but think that the city should provide wholesome food at the lowest possible cost in public school kitchens. To lay the legal burden of learning upon children whose blood is impoverished and whose digestion is impaired by insufficient or unwholesome feeding is not in accord with the boasted altruism of an advanced civilization or with the divine command: Feed the hungry. Is this not also a subject for investigation by our national council?"

"Proprietary foods are the apparent cause in
Infantile Scurvy. nearly all cases of infantile scurvy. The (real)
cause is a destruction of the chemical composition
of the blood."—FRUITNIGHT.

"In small diets it is said that thorough mastication and insalivation aid in the more complete utilization of the food, and render possible greater economy, so that body weight and nitrogen equilibrium are both maintained on an exceptionally small amount of food. This principle was worked out by Mr. Horace Fletcher on himself, in an attempt to restore his health to a normal condition. Deliberation in eating, necessitated by the habit of thorough insalivation, results in the occurrence of satiety—on the ingestion of small quantities of food; hence all excess of food is avoided."—CHITTENDEN.

Many of the experimental diets previously referred to, extending over periods of seven days to twenty-one days, are of little value. Many of these experiments were conducted upon men of thirty years of age and under, and did not extend to all classes of workers.

In the work of Professor Chittenden there is no evidence as to the

quantity of water taken daily, whether the subject smoked or chewed tobacco, and nothing about beer or alcoholics.

"Many writers on food and nutrition are in the habit of speaking of the oils and fats as hydrocarbons. This term can be applied properly only to compounds which contain nothing but the two elements—hydrogen and carbon. Without exception every kind of oil, fat or wax, whether natural or vegetable, contains oxygen as well as the two elements just named. This incorrect usage of the term hydrocarbon is, moreover, peculiarly unfortunate since of the innumerable true hydrocarbons *not* a single one can be ranked as a nutrient, or as capable of being oxidized in the human body."—CHURCH.

Mixed Diet. "A mixed meat diet is natural and most suitable to man, because vegetable foods are more bulky, more irritating and less assimilable; moreover, animal foodstuffs produce more heat. To achieve a favorable result in absorption a reasonable combination of animal and vegetable foodstuffs is essential. For all healthy and for most sick persons a mixed diet is to be recommended."—L. KUTTNER.

"What to take at breakfast? If you eat toast, chew it slowly. Do not dip it into coffee, tea or milk. Bread and milk, oatmeal porridge? No! Why not? Because, firstly, they are slippery foods; they slide down into the stomach before the saliva contained in the mouth has had time to digest them. It then requires a strong stomach to tolerate such food until it is passed on to the intestines."—ALDERSON.

Bread poultices are not suited to a weak stomach internally!

"Efficient cooking is very necessary for efficient digestion. Is any indigestion due to mechanical faults in the mouth—that is, to faulty mastication? It is necessary for food to be divided into small pieces for the purpose of entering the mouth comfortably, and to supplement mastication, it being necessary for particles of food to be finely divided in order that the secretions of the mouth, stomach, etc., may be better able to act on the substances swallowed (chemical action). Are your teeth in good order? If not, go to a dentist and have them attended to. Having your teeth in good order, be very careful not to bolt your food; use your teeth for the object for which they have been provided. Masticate well and slowly, thus finely dividing the articles of food, allowing the saliva in your mouth the time and the chance of acting chemically on the food."—ALDERSON.

The beginning of ill-health dates from the use of semi-solid and liquid foods by the adult. If teeth are not exercised their sockets become more or less useless and the teeth begin to loosen. The stomach

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having nothing to do begins to fail in its duty, the secretion of gastric juice is not sufficient and the whole line of symptoms, weak stomach, intestinal troubles, faulty digestion, from mouth to elimination, begin. The first duty, the first lesson in the doctrine of health, is to teach your patient the proper method of feeding; the hygiene of the mouth as well as that of the whole body. Caries is largely a question of environment, and teeth are not immune when surrounded by filth added to failure in their proper exercise. The consequences of using improper foods—foods not suitable for mastication—are loose teeth, carious teeth, separation of the gums, atrophy of the muscles of the stomach and bowels, and a train of digestive disorders which induce neurasthenia, dimness of vision and loss of ability to excrete through the skin, kidneys and other emunctories.

In conclusion, living is a dangerous occupation anyway we look at it. All sorts of things to eat which we buy at the stores are adulterated; the meat at the butchers contains formaldehyde or ptomaines, the vegetables at the market are stale and suggest colic. "Now we read that our own tomatoes are liable to poison us if pickled too green, and if we salt them we are told that people are poisoned with sodium chloride! Maybe, after all, it is better to be a beast, or bird, or a fish, and not know about such things."

FOOD VALUES WITH TABLES.

THE UNDERMENTIONED TABLES WERE COMPILED FROM ANALYSES IN THE AGRICULTURAL DEPARTMENT AT WASHINGTON, D. C.

Flesh Foods.	Refuse.	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salts.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Loin of beef, edible portion.....	...	70.8	24.6	3.7	....	1.3	615
Loin of beef, total.....	23.0	54.6	18.8	3.0	....	.9	475
Porterhouse steak, edible portion.....	...	60.0	21.9	20.4	....	1.0	1,270
Porterhouse steak, total.....	12.7	52.4	19.1	17.9	....	.8	1,110
Round steak cuts, edible portion.....	...	70.0	21.3	7.9	....	1.1	730
Round steak cuts, total.....	8.1	64.4	19.5	7.3	....	1.0	670
Loin of veal, edible portion.....	....	73.3	20.4	5.6	....	1.2	615
Loin of veal, total.....	22.0	57.1	15.9	4.4	....	.9	480
Shoulder of veal, edible portion.....	....	73.4	20.7	4.6	....	1.3	580
Shoulder of veal, total.....	18.3	59.9	16.9	3.9	....	1.0	480
Leg of lamb, edible portion.....	....	63.9	19.2	16.5	....	1.1	1,055
Leg of lamb, total.....	17.4	52.9	15.9	13.6	....	.9	870
Leg of mutton, edible portion.....	....	67.4	19.8	12.4	....	1.1	890
Leg of mutton, total.....	16.8	56.1	16.5	10.3	....	.9	740

Flesh Foods.

	Refuse.	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salts.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Pork ham, edible portion.....	....	60.0	25.0	14.4	....	1.3	1.075
Pork ham, total.....	.9	59.4	24.8	14.2	....	1.3	1.060
Pork head, edible portion.....	....	45.3	13.4	41.3	....	.7	1.990
Pork head, total.....	68.4	13.8	4.1	13.8	....	.2	660
Pork loin (chops), edible portion.....	....	52.0	16.6	30.1	....	1.0	1.580
Pork loin (chops), total.....	19.7	41.8	13.4	24.2	....	.8	1.270
Pork sides, edible portion.....	....	34.4	9.1	55.3	....	.5	2.505
Pork sides, total.....	11.5	30.4	8.0	49.0	....	.5	2.215
Chicken, broilers, edible portion.....	....	74.8	21.5	2.5	....	1.1	505
Chicken, broilers, total.....	41.6	43.7	12.8	1.4	....	.7	295
Turkey, edible portion.....	....	55.5	21.1	22.9	....	1.0	1.360
Turkey, total.....	22.7	42.4	16.1	18.4	....	.8	1.075
Black bass, edible portion.....	....	76.7	20.6	1.7	....	1.2	455
Black bass, total.....	54.8	34.6	9.3	.8	....	.5	205
Blue fish, edible portion.....	....	78.5	19.4	1.2	....	1.3	410
Blue fish, total.....	48.6	40.3	10.0	.6	....	.7	210
Flounder, edible portion.....	....	84.2	14.2	.6	....	1.3	290
Flounder, total.....	61.5	32.6	5.4	.3	....	.5	115
Lobsters.....	....	77.8	18.1	1.1	.5	2.5	390
Oysters.....	....	83.4	8.8	2.4	3.9	1.5	335

Green Vegetables.

	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salt.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Cabbage.....	91.5	1.6	.3	5.6	1.0	145
Celery.....	94.5	1.1	.1	3.3	1.0	85
Sun-cooked corn.....	15.5	12.5	5.0	66.0	1.0	1.150
Cucumbers.....	95.4	.8	.8	3.1	.5	80
Lettuce.....	94.7	1.2	.3	2.9	.9	90
Onions, fresh.....	87.6	1.6	.3	9.9	.6	225
Potatoes, fresh.....	78.3	2.2	.1	18.4	1.0	385
Potatoes, sweet.....	69.0	1.8	.7	27.4	1.1	570
Radishes.....	91.8	1.3	.1	5.8	1.0	135
Spinach.....	92.3	2.1	.3	3.2	2.1	110
Tomatoes.....	94.3	.9	.4	3.9	.5	105
Turnips.....	89.6	1.3	.2	8.1	.8	185
Artichokes.....	79.5	2.6	.2	16.7	1.0	365
Olives, green.....	58.0	1.1	27.6	11.6	1.7	1.400
Olives, ripe.....	64.7	1.7	25.9	4.3	3.4	1.205

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Dried Fruits.						
	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salt.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Dates	15.4	2.1	2.8	78.4	1.3	1.615
Figs	18.8	4.3	.3	74.2	2.4	1.475
Prunes	22.3	2.1	....	73.3	2.3	1.400
Raisins	14.6	2.6	3.3	76.1	3.4	1.605
Apples	28.1	1.6	2.2	66.1	2.0	1.350
Apricots	29.4	4.7	1.0	62.5	2.4	1.290

Dairy Products.						
	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salt.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Eggs	73.7	13.4	10.5	....	1.0	720
Butter	11.0	1.0	85.0	....	3.0	3.605
Buttermilk	91.0	3.0	.5	4.8	.7	165
Cheese, American	31.6	28.8	35.9	.3	3.4	2.055
Cheese, cottage	72.0	20.9	1.0	4.3	1.8	510
Cheese, cream	34.2	25.9	33.7	2.4	3.8	1.950
Cream	74.0	2.5	18.5	4.5	.5	910
Milk, skimmed	90.5	3.4	.3	5.1	.7	170
Milk, whole	87.0	3.3	4.0	5.0	.7	325

Fresh Fruits and Berries.						
	Water.	Protein.	Fat.	Carbo- hydrates.	Ash or Min- eral Salt.	Fuel Value per lb.
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories.
Apples	84.6	.4	.5	14.2	.3	290
Apricots	85.0	1.1	....	13.4	.5	270
Bananas, yellow	75.3	1.3	.6	22.0	.8	460
Blackberries	86.3	1.3	1.0	10.9	.5	270
Cherries	80.9	1.0	.8	16.7	.6	365
Currants	85.0	1.5	....	12.8	.7	265
Figs	79.1	1.5	....	18.8	.6	380
Grapes	77.4	1.3	1.6	19.2	.5	450
Huckleberries	81.9	.6	.6	16.6	.3	345
Lemons	89.3	1.0	.7	8.5	.5	205
Muskmelons	89.5	.6	....	9.3	.6	185
Nectarines	82.9	.6	....	15.9	.6	305
Oranges	86.9	.8	.2	11.6	.5	240
Pears	84.4	.6	.5	14.1	.4	295
Persimmons	66.1	.8	.7	31.5	.9	630
Pineapple	89.3	.4	.3	9.7	.3	200
Plums	78.4	1.0	....	20.1	.5	395
Prunes	79.6	.9	....	18.9	.6	370
Raspberries	84.1	1.7	1.0	12.6	.6	310
Strawberries	90.4	1.0	.6	7.4	.6	180
Watermelons	92.4	.4	.2	6.7	.3	140

Nuts, Shelled.	Water.	Protein.	Fat.	Carbo-	Ash or Min-	Fuel Value
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Cal- ories. per lb.
Almonds	4.8	21.0	54.9	17.3	2.0	3.030
Brazil nuts	5.3	17.0	66.8	7.0	3.9	3.265
Butternuts	4.4	27.9	61.2	3.5	2.9	3.165
Chestnuts, fresh	45.0	6.2	5.4	42.1	1.3	1.125
Cocoanuts	14.1	5.7	50.6	27.9	1.7	2.760
Filberts	3.7	15.6	65.3	13.0	2.4	3.290
Hickory nuts	3.7	15.4	67.4	11.4	2.1	3.345
Peanuts	9.2	25.8	38.6	24.4	2.0	2.560
Pecans	2.7	9.6	70.5	15.3	1.9	3.435
Pignolias	6.4	33.9	49.4	6.9	3.4	2.845
Pistachios	4.2	22.3	54.0	16.3	3.2	2.995
Walnuts, English	2.5	18.4	64.4	13.0	1.7	3.300
Walnuts, black	2.5	27.6	56.3	11.7	1.9	3.105

Consils, True and False; Including Their Bloodless Removal.

By ROBERT M. H. DAWBARN, M.D.

*Address before the New Jersey State Dental Society, Asbury Park, N. J.,
July, 1905.*

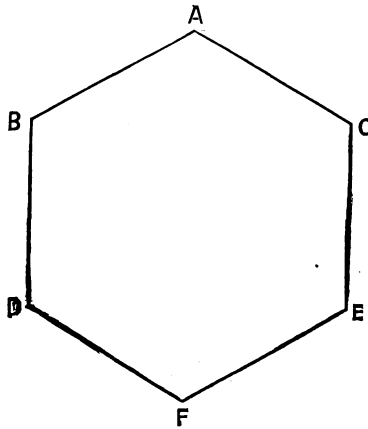
The subject upon which I have been asked to speak to you today is in one respect unique. Nowhere else, I verily believe, than within the magic circle of "Waldeyer's Tonsillar Ring"* can be found a common meeting ground for at least eight distinct classes of practitioners, all really and actively interested in the subject.

The otologist, because here lies the commonest cause of deafness, beginning with obstruction of the air-passage through the Eustachian tubes. The rhinologist, because here in the pharynx is found one of the most frequent sources of nasal catarrh. The laryngologist for the reason, besides others, that obstruction of the vault interferes woefully with tone-production, as also do the high narrow arch of the palate and abnormally small antra. The orthodontist because the disease in question leads to peculiar malformations of the upper jaw and to defective dentition, with consequent necessity for regulating work. The pædiatrist because perhaps no one single other factor in climatic conditions resem-

*Waldeyer: "Ueber den Lymphatischen Pharynxring." Deutsche Medicinische Wochenschrift, No. 20, 1884.

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bling those along the Northeast American seaboard compares with this in frequency of malign influence upon the child's health. The neurologist because a half dozen psychoses and neuroses have an occasional starting-point here, from reflex irritation, as well as from a poisoned and ill-aerated blood which cannot properly nourish the nerve centers. The general practitioner of medicine, because of effects upon all organs and bodily functions from the causes just hinted at, *plus* the fact that in all probability it is accumulation of filth and its myriad microbes, known and as yet unknown, in the loose, wide-opened sponge-like cellular spaces of adenoid growths and the true tonsils, that starts diphtheria or scar-



A, Luschka's tonsil; B and C, Eustachian or tubal tonsils; D and E, true or fauceal tonsils; F, lingual or glossic tonsil.

latina, or measles, etc., etc., overcoming by great numbers (through housing, feeding and supplying a breeding ground for our little enemies) the power inherent in the blood of killing them off if but moderate in their millions. And finally the general surgeon diffidently expresses his interest in the subject—just because.

I believe that all surgeons commonly operate for the removal of tonsils of all abnormal types and in all situations. Nevertheless, the field for general surgery is narrowing as rapidly as that for general medicine today; and we can hardly tread without stepping upon some broker's special field. Hence the diffidence aforesaid. As evidence in one specialty alone of this tendency to elbow us off the face of the earth we may cite the gynecologists. Time was when they limited their activities to the brim of the true pelvis. Today they are rising in the world and their upper limit is much nearer the brim of the hat. Nothing short

of a line firmly drawn beneath the chin seems likely to stop their ascent. Maybe they too will find excuse for entering the magic circle of Waldeyer!

**False Tonsils
Defined.**

I have spoken of false tonsils. The correct term is pharyngeal lymphoids, or lymphoid growths. Adenoids is in nowise a correct term for them; there is no pathological justification for it, but I fear it is too fixed now to be eradicated from our vocabulary.

These vegetations are practically identical in structure, save for a looser texture commonly, with the faucial tonsils. That is the same as saying that they are open-meshed lymph-nodes, very vascular, having, however, no deep crypts nor pockets but abundance of irregular spaces within and between them, in which dirt and discharges are held, and being in a measure without the dense capsular investment of lymph-nodes elsewhere.

Age.

At what age do they appear, and with what frequency? There seems to be no period, even of early infancy, exempt. One of the worst cases I have cured was in a baby not nine months old. A surprisingly large quantity of lymphoid material was removed.

Frequency.

Regarding the frequency, doubtless climate is a prominent factor therein. When, less than a generation ago, the disease began to be generally recognized, it was at first claimed that 5 per cent of all children suffer therefrom, to some degree, in our very severe climate. But of late I am sure that this estimate is, by those most competent to judge, regarded as far too low. Some children's specialists double it—triple it! And yet I can well believe that in the tropical and sub-tropical zones, and especially where the air is comparatively dust-free, and the variations in temperature and humidity are less startling than with us, there may well be much lower percentages than any that I have named.

**Evil Effects
of
False Tonsils.**

The ill-effects of large pharyngeal and faucial tonsils are numerous. With an audience of stomatologists, I will, however, only discuss in detail those having a direct bearing upon that specialty of medicine.

Perhaps the most prominent of these bad results are four:

1. The high, narrow arch of the palate.
2. The insufficient development of the upper jaw.
3. The dentition, imperfect in quality and irregular in order.
4. The tendency to decay, especially of those teeth nearest such

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growths and to various types of stomatitis and gingivitis, mainly induced by the myriad microbes which the interspaces of these vegetations harbor and encourage.

Etiology of High Narrow Vaults.

To study these in order. 1 and 2. How shall we explain the high, narrow, hard palate which is so frequently found in children subject to the troubles under discussion? After considerable thought, I would reply that there seem to be at least seven factors in its causation.

(a) The first and most important of these I believe to be a purely mechanical one. To explain: I am surely not overstating the fact if I say that nine out of every ten cases of pharyngeal tonsils are also cases of diseased and abnormally large true or faucial tonsils. It is certainly the rule with me rather than the exception to have to remove those at the same operation with the emptying of the obstructed pharynx.

Now I am certain that any other surgeon will agree in telling you that a fact too frequently overlooked, is the firm adhesion so often found when sought for, between the diseased tonsil and the pillars of the fauces, and especially the anterior pillar. An operator neglects his duty who does not look for and carefully separate such adhesions; and sometimes this is not easily done, for they twain have become one flesh, so to speak.

This being true, it follows that in the act of swallowing, the large tonsils, being dragged down mechanically with the bolus of solid food in the act of swallowing, in turn exert a distinct downward pull or tug upon their adherent pillars; and these in turn must pull down upon the sides of the bony palate to which they are attached. Inevitably, when many thousands of times this tug is repeated, in the course of months and of years, a lateral narrowing of the arch is the result. (The writer has learned that Dr. Dwight L. Hubbard also holds the opinion as to causation just expressed herein, but does not know whether Dr. Hubbard himself or another originated it.) If this explanation be the true one, it follows that we should see the high, narrow arch in its extreme development, mainly in the cases where tonsillar hypertrophy with adhesions to the pillars of the fauces is peculiarly well marked, and beginning while the bones are still young and soft enough to be capable of yielding readily to such force; and this I believe to be true, so far as my own observations go.

(b) The second factor in causing the narrow arch is so obviously important that no one can gainsay it. Once let this condition be begun by the cause just studied, and presently we will find that the narrow

superior dental arcade will begin to articulate towards the inner or lingual side of the inferior dental arcade; for the lower jaw is not especially involved, and develops naturally, therefore becoming wider in the transverse measurement between its alveolar process than the upper jaw. As soon as each abnormal articulation has well begun, every time the teeth are firmly opposed, they will tend to maintain the narrowness of the upper arch, and even to exaggerate it.

(c) The third factor in causation of this malformation of the upper jaw has to do directly with the pharyngeal obstruction and not with the faucial. It seems an axiom in nature that any organ, any function not put into use becomes atrophied and shrunken. Of this numerous instances will occur to you all. With the pharynx so filled up that the child has become a mouth breather, the nasal air passages have no longer the same *raison d' être*. They become comparatively useless in the economy, and from all sides nature begins to close in upon this waste space.

(d) Atmospheric pressure must not be omitted, among prominent causes. The rising of the arch of the palate, which is also the floor of the nose, is a step in the shrinking process under discussion.

(e) In the case of young mouth-breathers the still soft bones of the upper jaw may well be expected to yield to some noticeable degree, to the continual downward traction of the soft parts of the sides of the face, pulled upon by the weight of the fallen mandible. The effect of this must necessarily be to bring nearer together the sides of the arch.

(f) In a rather recent most interesting study of the stigmata of degeneration, Dr. Frederick Pederson, one of our highest authorities, has discussed many of these; and among others he includes abnormally-shaped palates, specifying the high, narrow or Gothic roof of the mouth, the hip-roofed shape, the abnormally flattened, and a few others. I do not mean to have you infer that either he or I believe that more than a small minority of such palates represent such stigmata; but a few do, and hence we must include this, our sixth factor, in the order in which I chance to name them. In some instances though not indicative of degeneration, the narrow arch, or other unusual shape, is unquestionably a matter of family inheritance, just as is the shape of the nose, for instance.

(g) Seventh, Dr. J. B. Littig has pointed out that normally the tongue against the roof of the mouth supports the latter and maintains its normal shape while the bones remain soft, in nose-breathers. But in mouth-breathers, the tongue no longer can serve this useful function.

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3. The third of the bad results of a stomatological nature, to which I alluded a few minutes ago, was dentition, irregular in order and imperfect in quality. This, it would seem, can readily be explained since it is in the same category with the numerous other physiological activities adversely affected by insufficient oxidation, and by continually poisoned salivary and mucous secretions, with consequent anemia and malnutrition.

4. Regarding a fourth group of symptoms caused by the disease we are studying, I would allude to the readiness wherewith the teeth of these children decay, and especially those teeth that are hindmost, thus lying nearest to the poison-filled tonsils or pharyngeal vegetations.

Quite recently, in talking informally of tonsillar troubles, a member here present volunteered the remark that he was sure he had observed this, and two other members confirmed the statement from their own experience. It will be interesting to ascertain the general views of the society, today, upon this point.

Diagnosis. The diagnosis; how shall it be made? Of the six way-stations upon the ellipse of Wäldeyer's lymphoid ring, the lowermost three are open to ocular inspection with some degree of ease, i.e., the tonsil of the tongue, upon its upper surface far back and quite close to the epiglottis, and the two true, or faucial tonsils.

The symptom produced by hypertrophy of the glottic tonsil is chiefly an annoying desire for frequent deglutition. It may readily be seen by use of the laryngeal or mouth mirror. The other three way-stations are all pharyngeal ones—namely, the uppermost or Luschka's tonsil, and the two tubal ones, or cushions of the Eustachian tubes.

Of course the scientific and exact way of diagnosis is to examine the pharynx by aid of the forehead mirror and the laryngoscopic or post-nasal. But the educated finger tip is quite sufficient, though a more unpleasant way to determine absolutely the need for operation. One can recognize thereby with ease, in an instant, after a little practice, the absence of the smooth, slippery feel of healthy mucous lining, such as ought to line the wall of the pharyngeal vault—and such as one feels within the cheek—the buccal mucous membrane. Instead there is felt a mushroom or cauliflower-like growth, varying greatly in consistency according to age, duration and rapidity of development. At the same moment the doctor can determine whether one or both of the choanæ—the posterior nares—be obstructed.

This finger-method of testing has the double advantage that at one and the same time the surgeon convinces himself and the parents that

something is radically wrong, and calls for treatment; for first trimming down short his index finger nail, so that the parent can see that this can now do no possible damage, the test, if the diseased surface be lightly swept will almost always result in a brief flow of blood from pharynx, the nose, or both. This, as the examiner must explain, would be wholly impossible were the mucous surfaces of the vault healthy—as much so as if touching the tongue made it bleed. To be sure, malignant growths and a few other diseases may bleed thus upon contact, but these are very rare by comparison, and of course also need a consultant's opinion.

But aside from any direct examination of the space behind the curtain of the soft palate, if you find a child who is a mouth-breather at most times, who snores when asleep, whose utterance tends to be thick and resembling in its faulty consonants the pronunciation caused by a severe cold in the head, whose expressionless face and open mouth give him a stupid look—with even less than all these together, you can be practically sure of your diagnosis. (Of course I assume that there is no obstruction of the nasal passages to be observed from the front.) With such a clinical picture we commonly expect to find also enlarged faucial tonsils; and their presence accordingly adds to your certainty. And wherever are found true tonsils of large size, a careful examination of the neck by the educated finger tip will disclose almost invariably at least one large gland—lymph-node—from the size of a pea upwards, situated upon each side at the bifurcation of the common carotid into its superficial and deep branch. Commonly there are yet others, for through the open doorway of the tonsils gain entrance, unquestionably, the poisons producing in time tubercular and other forms of diseased glands in the neck. But if but a single enlarged gland be found, this earliest one is invariably in the crotch of the carotids, as stated; of this I am personally convinced.

It is worth noting *en passant* that a baby who is very subject to coryza, and “snuffles” most of the time, is probably either syphalitic by inheritance or already afflicted with pharyngeal lymphoid growths.

With extreme frequency well marked cases of false tonsils, by obstructing the Eustachian tubes leads to ear trouble. Clifford Abbutt states that the very worst degrees of depressed eardrums are found in bad cases of adenoids, and that these children are the ones who, when stricken with diphtheria or scarlet fever, quite regularly develop suppurative otitis media and perforations.

Prevention of False Tonsils.

I know of no one means whereby in a catarrhal climate such as this, one can be assured of success in preventing lymphoid developments. Of course, local cleanliness is of the utmost importance. The

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hygiene of the nose should be taught as carefully as that of the mouth, and how the nose may with safety be cleansed. Particularly after a dirty journey or in windy weather blowing dust about and compelling its inhalation, nasal spraying or douching, as by the simple Birmingham douche cup, are wise measures of sensible precaution. But if done improperly, as we all know, syringing is capable of causing damage to the ears, forcing infected discharges or other filth up the tubes. It is probably always unwise to permit a child to employ this measure, which is nevertheless one which every older individual should learn to do properly. Like many other weapons for good, nasal douching by the fountain syringe, is, in unskilled hands, equally potent for evil.

One point in prevention of adenoids will seem to you in a measure heterodox, and yet upon after-thought will seem less objectionable than at first—namely, thumb-sucking. So long as a baby is comforting himself in this manner he must be nose-breathing and encouraging the nasal air space accordingly. The partial vacuum thus produced below the bony palate must tend towards its descent, by air-pressure above; and not necessarily in the shape of a narrower arch. Indeed, the upward pressed thumb, often temporarily flattened and widened in such children, must give rather effective support toward the normal shape of the roof of the mouth. In case the milk teeth have erupted, and you fear their being made to protrude anteriorly with consequent imperfect articulation, then of course we would have an important reason to bring the habit to an end. But otherwise, as Sander Brunton has pointed out, by increasing cerebral circulation through the spinal accessory nerve's peculiar relationship with the heart, thumb-sucking produces in a spanked baby, for example, a greater relief and sense of being comforted than any other possible thing could do, short of the consolations of religion, which unfortunately are reserved for those who are older. When we add to this reason for not disturbing the thumb-sucking infant the one just discussed—that it promotes nose rather than mouth-breathing, we may regard the habit with some equanimity of mind.

Treatment is solely operative. I will waste no time discussing palliative measures. The operation of tonsillotomy is performed in a few seconds with the guillotine of various modifications. We also need to separate by some other instrument the frequently adherent pillars, particularly the anterior. Sometimes, indeed, this pillar is so spread over the front of the enlarged tonsil as to render impossible effective and thorough tonsillotomy until this covering has first been transversely clipped.

The only instance in all surgery in which the writer considers cocaine locally as distinctly inferior to eucaine, is in this operation.

Where, unwisely, cocaine solution has been injected into the tonsil prior to its amputation, the blood vessels are promptly contracted, and the mass shrivels; and the next day the operator will be disgusted to find a stump much larger than he had intended to leave. If instead a eucaine solution be employed—injecting the mass to be excised by abundant needling of its base with a 2 per cent solution of encaine β , no such deceptive shrinkage occurs, and the anæsthesia is satisfactory.

In very rare cases the shape of the tonsil is flat and diffuse, rendering amputation impossible and demanding the electric or actual cautery point, used at intervals of days, again and again, for its diminution and absorption.

Though there are no recorded cases of death from loss of blood during childhood among those subjected to tonsillotomy, there have been numerous cases unpleasantly close to a tragedy; and death has in a number of instances followed this simple operation performed upon the adult, where dense connective-tissue deposits about the tonsillar vessels have held open and spouting their mouths, when cut across. Doubtless the use of the cold snare as the means, rather than the tonsillotome, is in such cases a safeguard. However, for those who do not care to buy any instruments not really essential, it may be well to call attention again to the author's repeated writings upon bloodless tonsillotomy.* Given an adult patient already anemic, and it will be to his physician a relief from a very real anxiety—if his case demands tonsillar amputation—and to the patient the removal of a very real danger, if that doctor, just prior to the operation, and aided by eucaine needling, will throw about the base of the tonsil, by four strokes of a semi-circular needle of large size, armed with stout silk or linen thread, the purse-string constriction therein detailed and illustrated. A mouth gag, or cork between the back teeth, and a needleholder are the only remaining essentials. With these one may either entirely forestall and prevent any blood loss, save the merest trifle resident within the vessels which are all tied off at or rather beneath the base; or else instead of prevention, may tighten and so instantly stop bleeding, doing this (with a resultant 24 hours of discomfort, or of morphine sleep, as may be thought best before cutting the constrictor) only in case the expected annoying or serious degree of hemorrhage seems otherwise inevitable.

Of the six regular arteries of the tonsil—roughly, two ascending, two descending and two transverse in their approach—the first two seem quite commonly most at fault, and consequently, if the operator tries tightening the transverse, lowermost part of his constrictor, first com-

*Med. News, May 20, 1899; also Med. Record, Dec. 17, 1892.

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pressing these vessels between the cord and his finger tip, he may find that this will readily control all hemorrhage; when he will proceed to tie just these lowermost ones off instead of all the six.

Regarding the aflation of pharyngeal lymphoids, simple as all agree that this is in skilled hands, opinions differ widely as to the best technique. I will quote Seifert*: "There is hardly another form of disease in which individual views regarding the method of operation, as well as anesthetic to be employed, are so diverse as in adenoid vegetations." This prominent specialist prefers chloroform, only a very light semi-narcosis being allowed, and the child being held upright and leaning forward, the blood running thus out of the mouth and nose. Certain others are cruel enough to use no anesthesia at all. Cocaine or eucaine are nearly useless because of the flow of blood which promptly washes them out of the tissues. Indeed, I know no small operation in which there is, just for an instant, such a gush of hemorrhage as that at the moment of detaching these very vascular growths; but it ceases as promptly as it comes, and is not to be feared—save in those already anemic, when it is unfortunate indeed.

Anesthesia Started During Sleep.

Personally, I do not consider it safe to give chloroform in the upright position. My own choice is for chloroform, in childhood; and even those strongly opposed to it in dealing with adults agree that with children it is safe. Jacobi, among many others, can be quoted to this effect. In this as in all possible instances of major anesthesia during the earliest years I prefer to ascertain the hour which the mother selects for her child's daily sleep, and entering the darkened room noiselessly, to anesthetize so cautiously and gradually—using the drop method and a chloroform mask—that the little sleeper only awakens when the operation is ended. It makes a remarkable difference in the amount of anesthetic required, whether this safest of plans—and most neglected—be used, or whether instead the frightened child be awake and screaming. Also, it earns the mother's gratitude. Although easy of accomplishment with chloroform and in childhood during natural sleep, such anesthesia using ether is far more difficult—and rarely can be done upon adults.

In the particular operation under discussion my choice is, to shift from chloroform to ether; because this permits and justifies the upright position, leaning forward, as already described. Upon the other hand, the position of Rose of London, often recommended—the head hanging down off the table-end, so that the blood runs out of nose and mouth and does not threaten to invade the larynx—while unquestionably the safest

**Die ärztliche Praxis*, 1898, xi., 81.

one as to the heart, if we must stick to chloroform alone, by gravity invites a greater loss of blood; which seems reason enough not to adopt it.

**Choice
of Instruments.**

Regarding a choice of instruments wherewith to clear away adenoid vegetations from the nasopharynx, there is a wide diversity of opinion. In the hands of one operator a tool in the use of which he has become skilled will therefore be safe, whereas it may be pronounced dangerous by another, having a different preference. This truism is nowhere in surgery more conspicuously true than in the circle of Waldeyer. Perhaps, however, Gootstein's curette, a kind of ring-knife, is as well liked by most operators as any of the numerous ones that could be specified. In addition, certain post-nasal forceps such as Löwenberg's or Hartmann's, or Troutmann's forceps to clear out the fossa of Roseamüller are particularly worthy of mention. Of course the gag is used meanwhile.

With little babies the vegetations may sometimes be found so soft that even a strong and long index finger-nail will suffice for their removal. The operation is quickly performed, without attempt to use mirrors; and guided solely by the educated finger-tip the surgeon decides the question when he has been sufficiently thorough. As ordinarily performed, the flow of blood is such as almost to frighten one seeing it for the first time. Fortunately it is of but brief duration. Still more fortunately, by attention to a certain step in technique, it is possible, and without difficulty, to reduce this to such a minimum as to justify, through this measure of prevention the expression "a bloodless operation for adenoids." It is chiefly to bring this to the notice of the profession that the present pages are written. One has to see in order to realize the gain in safety thereby—especially when dealing with a child already anemic.

**Bloodless Removal
of
Adenoids.**

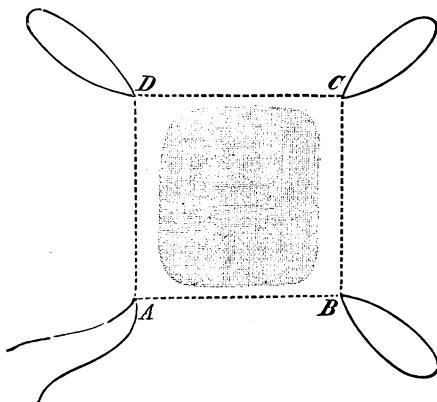
To-day no operator thinks of doing any severe cutting operation upon an extremity without first elevating and "milking" the blood back into the trunk and then cording; for the older a surgeon, the greater becomes his wholesome respect for a drop of blood. The chief cause of operative shock is unquestionably loss of blood.

Although this is as true as trite, who among us has applied the same guiding principle when operating upon head, neck or trunk? And yet if advisable in the one case it is no less so in the other. By cording lightly the extremities close to the trunk, within a few minutes one can see by the swelling beyond the constriction that blood in large quantities

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—even quarts, if desired, is being accumulated there. After perhaps five minutes of this the surgeon increases the tightness of constriction; and now the blood so segregated is neither added to nor diminished in amount until this brief operation ends. Both thighs suffice, in my experience; an arm might be added if desired. It will be plain that in consequence of this step there is an enormous lessening of the pumping that the heart has to do, as well as a great diminution in vascular tension. Vessels cut across bleed much less, and clotting in their mouths the more readily occurs, since there is little tendency, comparatively, to force out the coagula by *vis à tergo*.

It is obvious that what applies to adenoid work in this regard, regarding blood-saving, applies equally to each and every cutting opera-



The shaded portion represents the tonsillar stump. The letters indicate the order in which the needle is four times introduced, following the dotted lines.

tion upon the head, neck and trunk; and the writer believes that it is only a question of time when this expedient, regarded by him for years as one of the best friends alike to surgeon and to patient, shall come into habitual usage in the profession.

Where some longer operation is in contemplation an assistant should devote his entire care to the question of blood-pressure, as tested by the skilled finger upon the pulse, and the control of the cording. After ten minutes or so (a time wholly safe as to vitality of the limbs involved in such temporary stasis) one constrictor is relaxed at the groin while a corresponding one accumulates blood at the shoulder; ditto with the other leg and the other arm. After a further ten minutes, a return similarly to the lower extremities, *et cetera*. It will be plain that a some-

what greater amount of blood and of consequent swelling is needed within the arms to equal the bulk readily poured into the legs.

Of course there is no weapon in our armamentarium potent for good that cannot also by mishandling become potent for ill. It is possible for example by draining blood away from the heart, in excess, to cause it to beat faintly and the patient to break out in a perspiration, as if from nausea; but such faintness is readily controllable, of course, and preventable by a little experience. Doubtless certain heart-diseases, also atheroma of the vessels, again a tendency to clotting upon stasis, and a few other pathological conditions would interdict the employment of the means under discussion. They cannot more fully be studied here. It is assumed that a reasonable degree of judgment would be employed in this as with all other surgical expedients.

To avoid discomfort afterward where the rubber tubing or the tourniquet has encircled the limbs, I always begin by wrapping about it at this point a towel first repeatedly folded lengthwise.

In adenoid work it will be found to aid in hastening firm clotting of the surface just deprived of the diseased vegetations, if the operator applies thereto, repeatedly, a very small gauze sponge held by a long applicator, and with the gloved hand, firmly squeezed out of actually boiling water. Of course the soft palate must meanwhile be held out of the way. Neither here nor upon any other raw surface will this do harm. It never causes sloughing even of the most delicate tissues. Instead, it instantly produces a pale surface from coagulated albumen. "Hot" compresses, as commonly recommended to stop bleeding, are about useless—when compared in efficiency with 212° F.

The after-treatment is very simple. There is
After-Treatment. but slight discomfort, for the operated surfaces are above and behind the hanging palate, and deglutition does not bring the food in contact with any raw part. Any ordinary sore throat often causes much more annoyance than these little people feel the next day. They usually are kept recumbent only twenty-four hours, assuming that the circulation is normal. If any unpleasant odor whatever be noted after a day or two, I gently syringe the nose with normal salt solution, warm; otherwise do not disturb the healing surfaces upon which nature is at work.

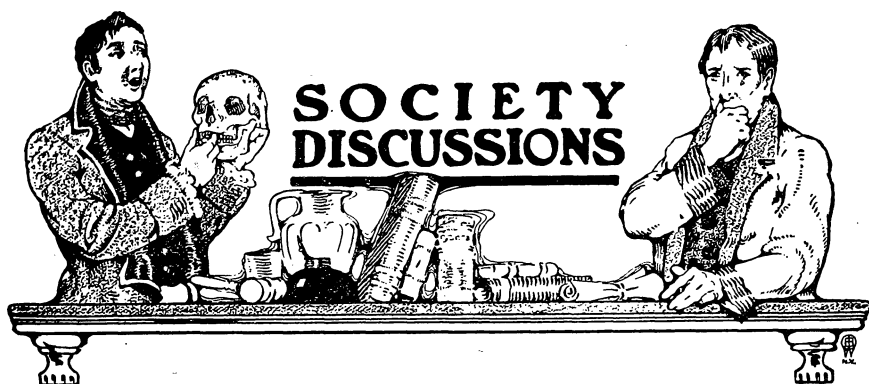
The child must be encouraged to use the natural breathing passages now. Quite as a habit, mouth-breathing may otherwise continue, to his detriment. Sometimes parents find it advantageous to have the little

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one sleep in a contrivance, home-made, of a skull-cap *plus* a chin-cap, connected by an elastic or a band and buckles down both cheeks. But *before* this operation, it is simple cruelty to demand that a mouth-breathing child shall keep its lips closed. It would mean partial suffocation.

Does the disease recur? Very rarely, when operation has been well performed; and the same is true of a re-hypertrophy of the amputated tonsils. The cases of recurrence are so rare as to be a negligible quantity, not over 1 per cent at most.





New Jersey State Dental Society—Thirty-Fifth Annual Meeting.

Thursday, July 20, 1905.

President Chase called the meeting to order.

The secretary called the roll.

Dr. Jacquette, from the Membership Committee, reported favorably on the following applications: Dr. William I. Thompson, Asbury Park, N. J.; Dr. W. M. Skinner, Phillipsburg, N. J.; Dr. Walter M. Curtis, Camden, N. J.

The above-named gentlemen were unanimously elected.

The president then introduced Dr. Robert M. Dawbarn, of New York, who read his paper.

Discussion of Dr. Dawbarn's Paper.

**Dr. Farlan,
New York.**

I have several times heard papers read by Dr. Dawbarn, and I consider this one of the most instructive and valuable talks on the subject that I have heard for a very long time.

I wish to thank Dr. Dawbarn for the clearness with which he has described the etiology of adenoids and the methods, and necessities, for their removal.

I think he has epitomized the various troubles that people suffer from in tabulating these different deformities, just as we need them. One form in particular is that of irregular teeth and the growths in the tonsillar regions in many cases, I have no doubt, are directly the cause of an immense number of malformed teeth.

**Dr. St. John Elliott,
New York.**

Dr. Dawbarn has frequently attended on me personally and has always appeared to me to be a perfect encyclopedia of surgery, and not only that, but in many cases his knowledge of the operation has gone so far as not only to greatly reduce the danger of the operation, but, to a large extent, the facility with which it can be performed.

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Dr. U. H. Jackson,
New York. I wish I might say something to edify you on the subject today, but many of you will remember that I have harped on the same matters for a good many years and I sometimes make the claim that I was one of the first to call attention to the necessity and the advantage of sending patients to the rhinologist for relief from tonsillar trouble.

Great advantage is to be derived from the early removal of adenoids, and where the enlarged tonsils are not removed, serious deformity may often result, and the irregularity depends on the degree of stenosis that exists.

It has been my custom to send patients to rhinologists early and before I begin to operate for relief from the irregularity. I make it plain to the patient that my work will not be perfect unless we make the patient a free nose-breather. Let the rhinologist find what the conditions are and then relieve them if possible. I always request the rhinologist to make a report to me, and I keep a tabulated record of them; and one of these days you will hear reports made on those cases and you will see the models both before and after the regulation, and I think you will find it to be in a form that will be of advantage to the profession. I have kept these tabulations for a number of years.

Dr.
Charles H. Meeker. I have heard Dr. Dawbarn a number of times and always with pleasure and much profit. His paper before our State Dental Society some few years ago on diseases of the antrom was one of the finest I ever listened to, and what he has said this morning is a still further education to the practicing dentist.

Dr. S. E. G. Watkins. I have been exceedingly interested in this paper. As Dr. Harlan says, I think it is one of the most instructive I have ever had the pleasure of listening to. He made everything so thoroughly clear; he went into the detail of the subject in such a way that we could not help but understand it. In many cases such papers are written in such a way that they leave us wondering, but his paper was certainly very clear.

There was only one point in the paper which did not seem exactly clear to me; perhaps my mind was wandering at that particular moment, but I understood the doctor to say that he would recommend mothers to allow their their children to suck their thumbs, as a preventive of adenoid growths. What I gathered was that he would allow the child to suck the thumb, even before there was any suspicion of the adenoid, with the idea of preventing it from ever occurring. Was that so, doctor?

Dr. Dawbarn. That is correct.

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With that particular point of view I should certainly take issue with Dr. Dawbarn. I think he would do the child a great injustice, because there is still the possibility of there never being any adenoid growth, and if the child once becomes accustomed to sucking the thumb it is one of the most difficult things in the world to break the habit, and in almost every case there is serious deformity of the superior maxilla, and it seems to me that in a case of that kind we are inviting trouble before we have even had a suspicion of trouble from the other direction, and I should certainly want to avoid that.

With adenoid growths in many cases the result will be very much the same as if the child had been thumb-sucking; there will be the depression of the upper maxilla on both sides and the high arch, and from the fact of the child breathing through the mouth, the muscles of the jaw drawing down upon the molars and bicuspidals will cause them to depress and shove the incisors, so that the appearance will be very much the same as if the child had been a thumb-sucker.

I have some cases in which I have made models of both thumb-suckers and adenoid sufferers, and the appearance is very much the same. So it gives the men who regulate these matters a job in either case!

Mr. President and Gentlemen: I have to thank
Dr. Dawbarn. you warmly for the courtesy with which you have treated my remarks. I could have borne it with equanimity, though with sorrow, if I had been partially scalped—in this hot weather—and more especially if you had given me the cold shoulder! As it is, you have treated me at least like friends and I thank you very much.

The only criticism offered was in reference to thumb-sucking, and I will endeavor to fight gallantly for our little friend to the extent of a few minutes in this, his only, creature comfort. I am bound to say that if the risk of adenoids was only a slight one I would not so strongly recommend thumb-sucking as a preventive, but on the northeast American seaboard the proportion of children afflicted with adenoids is very great. In my own family of three, all my children had to be cured by operation, and while I would not say that the percentage of such troubles is as great as 25 per cent., yet the danger of adenoids is so great that any method which is not positively injurious and which will tend to prevent them, and at the same time make the child happier, has a certain basis in logic.

Concerning the resemblance between thumb-sucking children and those suffering from adenoids, I could not help thinking that he had in

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mind cases of children who both had a moderate degree of adenoids and were thumb-suckers.

As to thumb-sucking having a tendency to draw down the sides, doing just what the adenoids do—or rather what the adenoids will not do—you will remember there were six ways I went over which began with the act of swallowing, with large tonsils—which is largely the main cause. In the very act of thumb-sucking there is an upward thrust, on each side of the thumb, against the upper jaw; the tongue covers the thumb and presses it against the upper jaw during the act of sucking, and that seems to me to be abundant to prevent the trouble spoken of. Theoretically only, I am inclined to think you might have malocclusion of the upper four incisors; practically I have not seen anything of the kind which has been attributed by the dentist or the family doctor to thumb-sucking. Personally I have seen no reason to worry over thumb-sucking and have seen no case where the child's future was destroyed because it continued to suck its thumb. When the child reaches the age when it begins to think whether its hair is properly combed and its finger-nails are as they should be, he stops sucking his thumb, even if he has not done so before; and even if he retains the habit of sucking his thumb until after he is five or six years of age, sucking the thumb is better than sucking corn-cob cigarettes!

Apropos of the pleasure a child derives from thumb-sucking, it may be noted that even so famous a man as Lander Brinten says in his *Materia Medica* that in sucking there is a continuous repetition of the act of swallowing. You will remember that the nerve which controls the act of swallowing and the nerve which is the inhibitor of the heart is one and the same nerve—the eleventh cranial nerve—which is not powerful enough to have both of these functions carried on at the same time; that is to say, if you are making repeated swallowing motions your heart will race because the eleventh cranial nerve is not for the time being powerful enough to control the racing of the heart. As Lander Brinten points out, while the child is sucking his thumb he is making the swallowing motion, and that reflexes in the way I have mentioned by allowing the heart to race and thus supply the brain with more blood than would otherwise get there, and that produces a sense of comfort and is what makes the child feel happy, even after being spanked, while sucking his thumb! He also makes a remark in this connection which at first sight is in favor of our friends, the prohibitionists. Their point of view is upheld by Lander Brinten in this way. He says if a person is fainting, a greater stimulation of the heart results from sipping repeatedly from a glass of water than from bolting a glass of whisky; therefore he recommends a person to sip a glass of water if fainting.

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Personally, I do not see why one should not sip the whisky and thereby get all the benefits at once. (Applause.)

On motion a vote of thanks was tendered to Dr. Dawbarn for his excellent paper.

On motion, adjourned until 8.30 p. m.

Thursday, July 20, 1905.—Evening Session.

President Chase called the meeting to order.

The secretary called the roll.

The Membership Committee reported the following applications for membership: Dr. John E. Woolverton, Trenton, N. J. Sponsors, Drs. James Woolverton, Sutphen and Woolsey. Dr. S. C. Hamilton, Bloomfield, N. J. Sponsors, Drs. Sutphen, Meeker and Woolsey.

On motion the above names took the regular course.

The Committee on Registration reported a total of 2,229 entrances.

On motion report received.

Committee on Smoker reported that members of the committee would be in attendance at the Auditorium after 9 o'clock, Friday morning, to distribute tickets.

On motion report accepted.

Committee on Exhibits reported eighty-nine exhibitors retaining and paying for space and eighty-seven actual exhibitors.

On motion report accepted.

The secretary read the following telegram:

“PORTLAND, Ore., July 20, 1905.

“Greetings from the Dental Congress, Portland, Ore.”

On motion the communication was received.

On motion, resolved that a return complimentary telegram be sent to the Portland meeting.

The president then introduced A. W. Harlan, M.D., D.D.S., of New York, who read a paper, entitled “Food in Its Relation to Teeth—Their Sockets and Adjacent Structures.”

Mr. President, Ladies and Gentlemen: Before reading this paper I wish to state that at its conclusion there will be thrown on the screen a few pictures. This was not announced in the program, and I think that they are of such a character as will probably be entertaining, if not instructive. And, before commencing the paper, I would like to mention the works that have been consulted in its preparation. It has been a labor of many months:

Physiological Economy in Nutrition.....Chittenden
Eating and DrinkingHoy

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Forbidden Foods	The Koran
Dietetics	Encyclopedia Britannica
Food	The Standard Encyclopedia
Unclean Foods	The Holy Bible
Indigestion	Alderson
Practical Dietetics	Pattee
Modern Dietetics in the Causation of Disease.....	Wallace
Uncooked Foods	Christian
Food and Dietetics	Pavy
Foods	Blyth
Foods	E. Smith
Food and Its Functions	Knight
Gastronomy as a Fine Art.....	Brillat-Savarin
Military and Prison Diets.....	Government reports
Reports on Food Values	U. S. Government
Uric Acid, Gout and Urinary Diseases.....	Haig, Luff, Purdy et al.
Foods and Feeding	Thompson
Gout, Rheumatism, etc.	Longstreth
Physiology	Kirk, Vaughan
Preserved Foods	U. S. Government

Discussion of Dr. Harlan's Paper.

Mr. President, Ladies and Gentlemen: "Living
Dr. B. F. Luckey. is a dangerous thing," and I am face to face tonight
 with one of the dangers which I never suspected was
 lurking in my pathway. When it was brought to my attention that I had
 been selected to open this discussion on Dr. Harlan's paper I wondered
 why. It was done without consultation with me and without my assent.
 Like the good-natured being that I am I simply bowed my head in humility
 and said "I will do the best I can," but I trembled at the prospect. We
 all know Dr. Harlan's ability; we have known him for a good many years;
 we know his depth of thought and his range along professional lines, and
 I said: "Well, it is too much for me, but I will do the best I can. I know
 little or nothing of dietetics; I never have eaten much in all my life and
 never have had much chance to find out. Harlan has lived by eating; he
 shows it by his form and figure." (Laughter.) I received a copy of his
 paper last night and read it over today. I was impressed with the amount
 of thought he has given to its construction; it is a wonderfully well-com-
 piled paper; it is largely, as you noticed, compilations from authorities on
 dietetics and extracts from newspapers, journals and authorities on the
 line of true and proper living; there is very little of Harlan, but what there
 is of him is good. It is a paper which seems to me to interest us most as

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a matter of general information for our good and to the same extent for the good of our patients—a paper that to us as dentists contains a message, short and to the point. It will take but little time for me to discuss it; there is nothing to criticise; there is nothing to object to. The moral, the point that the paper contains is, as I see it, “Use your teeth; teach your patients to use their teeth. Nature provided these organs for a purpose; recognize the purpose and use these organs.” That is the whole story as I see it. By building up the body we benefit all parts of the body, the teeth along with the other parts.

That modern civilization is responsible for a large part of dental ills I think cannot be controverted; that it is entirely responsible for them we know is not true. Years ago in the British Museum I saw a mummy with an authentic record of 7,000 years back; the wrappings about one side of the face of the mummy had been disturbed either by age or by handling, so that the lower jaw was exposed from the angle almost to the symphysis; at the base of the root of the first molar tooth was extensive destruction of the alveolar process, showing beyond any question that the individual in its lifetime had been afflicted with an alveolar abscess; two of the other teeth were carious. At the World's Fair in Chicago in 1893 I examined very many skulls of prehistoric people taken from the mounds of Ohio, and also from the mounds here in New Jersey. In many of these skulls I noticed the same abnormal conditions that we find today in our daily practice; carious teeth, crowded teeth, V-shaped arches, destroyed alveolar process, tartar and, in some cases, but not in many, encroachments of tartar that would lead me to believe that there had been pyorrhea alveolaris.

It may be true—I believe it is true—that these conditions perhaps were not as prevalent among those races as they are today; but we are so fond of blaming all our dental troubles to modern civilization that I believe it is proper and right to call attention to the fact that probably ever since Adam and Eve gamboled in the Garden of Eden there have been dental troubles, or, in other words, since there have been teeth, there have been tooth troubles.

Dr. Harlan has given us tables that are convincing because they are from authentic sources, and they are interesting, as I remarked before, from the standpoint of general information; but his paper when boiled down means that we shall eat, that we shall teach our patients to eat, those things which require mastication; that the soft, the mushy, the fluid foods may be given as adjuncts in mixed diet, but that the fond mothers of today who select the choicest bits of food for their little darlings, with a view of saving their little stomachs, forget that they are at the same time injuring their little teeth.

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**Dr. Stellwagen,
Philadelphia.**

I can but express my very sincere thanks to Dr. Harlan for the care and labor that he has expended upon this paper, and at the same time I cannot but feel that it is one of the most interesting subjects that we could discuss in a dental meeting. I am sorry that I did not have the opportunity of reading the paper before hearing it this evening. It struck me, however, as interesting from a number of standpoints, and I should have liked to call attention to some of these points which have passed through my mind as he was reading it. It is, however, too late for us to spend time upon that subject, still I cannot but call attention to the idea that has frequently occurred to me. Men of intelligence would no more think of buying a farm without knowing something about the condition of the land and its utility as a food for plants that he proposed to raise on it, than he would think of investing money in something that he knows nothing about. Yet we think almost nothing at all of the effect of the different foods upon the teeth and upon the general economy. The teeth are a part of the whole body. Some years ago I took occasion to make a series of examinations of crippled children's mouths, and I found that a very large percentage of deformity and disease existed in the mouths of those children who were so crippled that they could not take normal, natural exercise, and in some few exceptional cases, where they managed to take exercise, for instance, with the hands when the feet were crippled, I found the children had better teeth than children who were in fairly good condition, but did not exercise.

So it seems, first, that we must regard what the food is which we are providing for the children and, secondly, that by proper food, or in other words, regime, we can make almost anything out of a crippled child. It is on the same theory exactly that men are fed in certain ways to make them fit for certain particular or especial purposes.

What I do want to call attention to and what I think will before long demand attention, is that the dentist, inasmuch as he guards the portals of the laboratory of the body, should be the one who should always be consulted before a diet is prescribed for any child or adult. If we could read the mouth aright, we could read the whole past history of the individual. You all know the markings, the conditions, and so on, that we find in the dentine, all showing, indelibly, the history of how the individual's teeth were nourished. The bicuspid teeth are generally the first teeth that are lost; they are generally the teeth that are most apt to become defective, and from that, in conjunction with the fact that we know that after the attainment of majority, say at thirty or forty years of age, the bicuspids generally begin to fail; we know that about that period of life the amount of carnivorous food should be diminished. Therefore, I argue

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that by an examination of the teeth where we find that the carnivorous teeth are defective, we should advise such patients to reduce the amount of meat that they eat. So we might go on, and in that way by merely looking at mouths, ascertain what proportion of the different kinds of food should be taken by the patient.

The mouth, as you know, is the indicator of the condition of the alimentary canal. A physician no more thinks of prescribing for his patient without looking in the mouth than he thins of writing a prescription without pencil and paper, and he does not, in his mere glance at the mouth, have so good an opportunity as the dentist does in his thorough examination, of drawing a conclusion as to what the condition of the alimentary canal is, and the alimentary canal and its digestion is to the rest of the physical economy, what the soil is to the crop of the farmer. (Applause.)

The subject of diet is one that interests us all, and especially for the sake of our patients. I think that dentists have given too little attention to the study of diet, and that their patients have really suffered at their hands thereby. I believe, with Dr. Stellwagen, that the dentist should dictate largely the diet of his patient.

Dr. Lenox Curtis,
New York.

Dr. Harlan reminds me in his remarks about milk, of my views on that subject. I believe that milk was only intended for babies—babies of all kinds—and that as soon as the teeth come, its use should be discontinued. I have had of late an opportunity of taking this matter up with some of the large laboratories in New York, and have urged them to advocate something different for the poor children and to watch carefully the kind of milk given; not to give any that has been adulterated, but to give the raw milk; to give mother's milk preferably and to give cow's milk diluted just sufficiently to prevent indigestion, and to feed babies with cold milk. I have seen infants, from the first drop of milk taken, eat nothing but cold milk, summer and winter, and I have seen these children grow up without an ill—they never knew what sickness was. That rather explodes the theory that has been in use for years of giving warm food to children. We run in ruts, and the more milk is "sterilized" and the more fads there are presented to the mothers, the poorer off are the children for it.

I am sure that the subject of nut-eating has not been properly ventilated in the medical and dental profession. By such food alone we could live well. I happen to know some physicians who eat nothing but nuts, with water, and they are giants in health. I do not say that this diet should be advocated for all, but I think that we do not eat enough natural food; many artificial foods, and notably those presented to us in the shape of breakfast foods, are so adulterated that they are not fit to be

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eaten—and I must agree with Dr. Harlan concerning the eating of poultices! Such food is not fit for the stomach; it ruins it and brings on all sorts of indigestion.

Before closing let me say a word against the use of coffee. It is one of the most pernicious articles of diet we have; it is perhaps one of the most delicious, but also the most pernicious, and wherever it is taken habitually we find indigestion and nervous troubles. In many cases where the hand is shaking and the individual is so nervous that he can hardly get through the day's work without a cup of coffee, if its use is discontinued and no other beverage than water used, the nervousness and the indigestion will be overcome. I have experimented on myself. Those who knew me fifteen or twenty years ago, when I was a coffee drinker, saw me pale and nervous. I have overcome all that by drinking nothing but water for the last ten or twelve years; I seldom drink coffee or tea, and I consider it certainly very injurious. I have seen many of my patients recover from their nervousness by the discontinuance of coffee alone.

Visitor. May I ask Dr. Curtis what degree of temperature he had in mind when he spoke of feeding infants with cold milk?

Dr. Curtis. I mean the temperature of the room. In mid-winter the mother will take the bottle to bed with her and put it under the pillow, and when the child wants the milk it is given, and it is probably of the same temperature as the room, say fifty or sixty degrees, and it is none too cold; and there is never any regurgitation of the milk; that I noticed.

**Dr. Brewster,
New York.** I thank Dr. Harlan for his paper which covers so much of the history of the subject. I was especially pleased with that part of it having reference to the experience in the army and navy, and in the colleges. It seems to me that shows very strongly what food is best in certain environments of life.

Now, as to milk. I think the Walker-Gordon laboratory has done more toward providing a proper food for infants than anything I know of. I have known of cases of infants who were almost at death's door who have been by the special care of the laboratory restored to perfect health. There is only one thing in regard to it that is a little unfortunate; it is so very expensive that it is only the rich who can take advantage of it.

Perhaps I might be excused for citing one case **Dr. Leroy, New York.** which came under my own observation not long ago and which I submitted to Dr. Harlan, which illustrates the influence of environment upon the teeth. There were two children

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who were brought up in the West in a district where considerable alkali was present in the water, so that it affected the enamel structure of the teeth to such an extent as to cause an erosion, which to me was very startling. They were under my observation for some years, and upon submitting the cases to Dr. Harlan he at once prescribed a diet which seemed to me very reasonable, and I am inclined to think (with Dr. Harlan) that the present conditions will soon disappear; that is, the appearance of an absolute denuding of the enamel from the face of the incisor teeth. Dr. Harlan thinks that some of the enamel still exists and in time the condition will improve.

That is but one instance, but I have no doubt but that food has great influence on the formation of tooth structure. But the main feature, as I understand it, of Dr. Harlan's paper, is the building up of the whole system by the proper selection of food.

Dr. Daily. I would like to have Dr. Harlan discuss the relative value of the nitrogenous foods and the non-nitrogenous foods as tooth-builders.

Another thing is the fact that we must not jump at conclusions from simply hearing a paper of this character. This paper has been brought about from deductions that have been brought forward by scientific men after investigations and experiments, covering in some instances only a period of a few months. If we stop to look at the anatomical structure of the human body and see how long it has taken for its construction to be formed, and also look at the pathological changes that take place in the construction of bone and remember that these changes do not take place rapidly, but cover a period of years, we might have grave doubts whether a change of food would alter the tooth structure in a limited time. In order to look at the subject from a scientific and practical standpoint we must take the past experiences of the prehistoric, the barbaric, the semi-barbaric and the civilized races and consider their food and diet and then we may reach some practical results.

Dr. Harlan. Mr. President: I will not take the time to quote any authorities with reference to the value of nitrogenous and non-nitrogenous foods in the building of teeth. I want to read, as Mrs. Parkington would say, a few "Anagrams" which I have prepared:

Acids are a necessity for man; he endures better, lives longer, fights better and excretes better when he has cider, lemons, oranges and other vegetable acids.

Ten grams of new milk when consumed in the body produced sufficient heat to lift 1.246 pounds one foot high.

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Variety in food is like variety in labor; one rests the mind, the other rests the stomach.

Parched corn, rich in nitrogen and other elements of food, salted, is always agreeable to the stomach.

Cocoa leaves chewed will enable a traveler to walk more than thirty miles per day. This is on account of the nitrogen.

An Esquimaux will eat twenty pounds of fat or oil per day.

A man whose weight is 150 pounds will eat of solids about $1\frac{1}{2}$ pounds per day, and the liquids (liquid or moist foods) will average $4\frac{1}{2}$ to 5 pounds per day.

Every day that you live, one day with another, you will eat and drink your weight in twenty-five days.

Artificial foods and some breakfast foods are predigested; they should always be examined for preservatives, benzoic and boric acids, formaline, formaldehyde, salicylic acid, borax, sulphuric acid, etc.

Friday, July 21, 1905.

President Chase called the meeting to order.

We will now hear the report of the secretary of
The President. the Examining Board.

Dr. Charles A. Meeker secretary of the State Board of Registration and Examination in Dentistry of New Jersey, then presented the report:

Secretary's Report.

In accordance with the provisions of an act regulating the practice of dentistry in New Jersey we submit the following report:

The State Board is becoming better known throughout the country, being geographically between two great college States. It receives by examination and interchange graduates from the colleges of two States and from all portions of the country.

By reason of its progressive work for interchange, and through affiliation with and official position held in the National Association of Dental Examiners, its good work toward the cause of ethical dental education, its State society and its five local societies, our official position enables us to hear many very favorable commendations from the graduates and members of the boards in other States.

There is an evident increase in number of applicants each examination, and I am glad to say the percentage of failures grows less each year,

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owing to the fact that the colleges are doing better work, fitting their students to go out and cope with the world with a better knowledge and higher standard of the dental profession.

At the annual meeting, July, 1904, Dr. Meeker was re-elected and recommended to the Governor to the place of examiner on the State Board for a term of five years, as his term expired the following October. The Governor sent him his commission in time for the October meeting of the Board which was held in Trenton.

At the meeting of the Board in Trenton in October the Board elected the following officers for the ensuing year: Dr. W. E. Truex, re-elected president; Dr. Chas. A. Meeker, re-elected secretary and treasurer.

At the examination on October 18, 19 and 20
Examinations. there were 16 applicants cited to appear; 2 of the number failed to appear for reasons unknown. One was an applicant of the July examination, who failed in one branch of the theory, and 13 were new applicants.

Out of the 13 present, 10 were successful and received licenses to practice dentistry.

Since the agreement between New York and New Jersey was signed we have granted licenses to 8 applicants.

Up to date we have not granted an interchange to any under the Asheville resolution.

Our July examination was held on the 11th, 12th and 13th in the Assembly Chamber of the State House. At this time we examined in theory only, the practical work having been completed in the offices of Dr. Meeker and Dr. Irwin.

The following is a summary as to the number in the July examination:

Applicants cited to appear.....	56
Applicants appearing for re-examination.....	3
New applicants appearing.....	51
Cited, but no appearance.....	3
Total number for July examination.....	56
Total number for October examination.....	16
Total number examined October and July.....	65

Owing to the short time intervening between the examination and the State society meeting, it is impossible to go over the papers and mark them to give the number passing at the July examination.

The registration of dentists has been another
Registration of Dentists. thing we have tried to accomplish without a mistake, so that when we make our annual report to the Governor there will be no registered and licensed dentist's name in New Jersey missing from the list; but to this time we have been

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unable to accomplish this, even by using the most strenuous efforts. Some blanks sent the recipients were not mailed in time for the report; others move and thus may occur an error in the list of registered dentists. We would solicit every dentist in the State to make it a matter of pride that his name should appear in this list. Last year we made every effort within our means to have the name of every one in the list, and when the report was printed and mailed we received a number of letters from dentists stating their names were not enrolled. Why? Because they did not send in the registry blank until after the report had been sent to the Governor. Then there are also mistakes because there is not enough care taken in writing to us to make out the signature, and very frequently we have to guess what it is or refer to old reports to see if there is anything that looks similar to the name on the blank. Last year we sent out 661 registration blanks, and received out of this number 549 in time to have the names appear in the report. We want to impress upon each and every one of you that the blanks must be sent in by the last of November, as it means a great deal of work to get up the report accurately, and the Governor requires the report to be in by December 1.

Legislative Committee.

Our Legislative Committee were to present some new points in our law which were deemed advisable, but owing to the change in the Legislature our counsel advised that we wait until another year.

In reference to the changes, we would recommend the substitution of the words "high school" for the words "common schools" in accordance with the higher trend of education now furnished by every State to the poorest of its children; also the prohibition of the incorporation, by two or more people of a company or association for the practice of general dentistry, on the logical principle that examining boards cannot examine a company or corporation to establish its fitness to practice dentistry; also the elimination of Section 3, which enables five licensed dentists of the State, by simply signing a request to the Board, to have one person examined as to his or her fitness to practice dentistry without the prerequisite of a dental college education; also an annual registration of \$1.00, with a deterrent fine of \$10.00 for non-compliance, if not made to the secretary by the first of December each year.

Many States have this clause in their dental laws, as it prevents the substitution of a student for the licensed practitioner in oral operations.

Illegal Practitioners.

We also wish to state, and the report of the county prosecutors will bear us out in our statement, that we have been very successful in clearing the State of illegal practitioners by forcing them either to leave the State or to comply with the requirements of the law.

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During the year we visited the greater number of dental parlors throughout the State and succeeded in compelling the proprietors to employ registered men in their offices. In some instances the places have been closed entirely. In Paterson one party who had been before the Board three times and made a complete failure at each examination left the State, after being threatened with arrest. In Bayonne two men who had been practicing there complied by taking the examination; three others reported as laymen, practicing by extracting teeth, were communicated with and they desisted in the work; two men in Trenton left the State, after being brought before the grand jury; another was brought before the grand jury, and they failed to indict him; later, through the Attorney-General's office, he was arrested on the penalty clause and found not guilty by the jury; then the Attorney-General took the case to the Supreme Court of the State, and at this time we have not had the decision. I believe it is not to be rendered until this fall, but we feel quite confident we will win this case, as we have already had a decision in the Court of Errors and Appeals. We feel somewhat handicapped at present, as all the prosecutions have to go through the Attorney-General's office, which means some delay. One case we had pending in Monmouth County has within the last two weeks complied with our law and his case is closed.

COUNTY PROSECUTOR'S REPORT.

Atlantic County..... (E. M. Packard), prosecutor, no report.
 Bergen County..... (C. W. Heydon), prosecutor, reports no infraction.
 Burlington County... (C. Harker), prosecutor, no report.
 Camden County..... (J. E. Duffield), prosecutor, reports no infraction.
 Cumberland County.. (S. C. Slade), prosecutor, reports no infraction.
 Essex County..... (W. L. Fish), no report.
 Gloucester County.... (J. G. Halsey), prosecutor, reports no infraction.
 Hudson County..... (C. F. A. Hane), prosecutor, reports no infraction.
 Mercer County..... (C. H. Dilts).
 Hunterdon County... (W. W. Hawke), prosecutor, no report.
 Middlesex County... (H. Iredell), prosecutor, reports no infraction.
 Monmouth County... (H. C. Scobey), prosecutor, no report.
 Morris County..... (S. B. Johnson), prosecutor, reports no infraction.
 Ocean County..... (A. S. Bailey), prosecutor, no report.
 Passaic County..... (W. H. Pruden), prosecutor, no report.
 Salem County..... (W. A. Jaquette), prosecutor, reports no infraction.
 Somerset County.... (C. M. Henry), prosecutor, no report.
 Sussex County..... (J. D. Haggerty), prosecutor, no report.
 Union County..... (W. Woolsey), prosecutor, reports no infraction.
 Warren County..... (G. M. Holden), prosecutor, reports no infraction.



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Interchange of License.

Interchange of license between New York and New Jersey was given a great deal of discussion, and a number of Board meetings were held, in which members of the New York Board were present and the subject thoroughly discussed, and at last we accomplished the interchange under the agreement as follows:

MINUTE OF AGREEMENT BETWEEN THE NEW YORK AND NEW JERSEY STATE BOARDS OF DENTAL EXAMINERS.

1. It is understood and admitted that the standard of the professional examination of each board is practically equal, and though different in detail is mutually acceptable.

2. Licentiates of the New Jersey Board, who have received the degree of D.D.S. or other recognized dental degree, are to be granted licenses to practice in New York State without examination on payment of the regular licensing fee, provided the preliminary education of the candidate is equal to that required by the New York statute, and licentiates of the New York Board are to be granted licenses to practice in New Jersey under the same conditions.

3. Immediately after any examination by either board complete sets of the questions used shall be mailed to the examiners of each State to the State Dental Commission of New Jersey and to the Examinations Division of the Educational Department of the State of New York.

4. Applications for license under this interchange agreement shall be indorsed in New York State by the president and secretary of the Board of Examiners and by the First Assistant Commissioner of Education and in New Jersey by the president and secretary of the Examining Board and by the secretary of the Dental Commission, and shall be accompanied by the original or certified copies of certificates of preliminary education.

5. The names of unsuccessful candidates in each State shall be sent to the secretaries of the Examining Boards and to the Education Department or Dental Commission as the case may be.

6. All papers connected with the examinations shall be placed on file with the Education Department or Dental Commission, and shall be public records.

SOCIETY DISCUSSIONS

7. Those who have received a New York State license to practice dentistry granted since 1895, or a New Jersey license granted since 1895, may apply for the interchange established by this agreement.

WILLIAM E. TRUEX,
CHAS. A. MEEKER,

For the New Jersey State Board of Registration and Examination in Dentistry.

WILLIAM CARR,
H. J. BURKHART,

For the New York State Board of Dental Examiners.

Approved December 29, 1904.

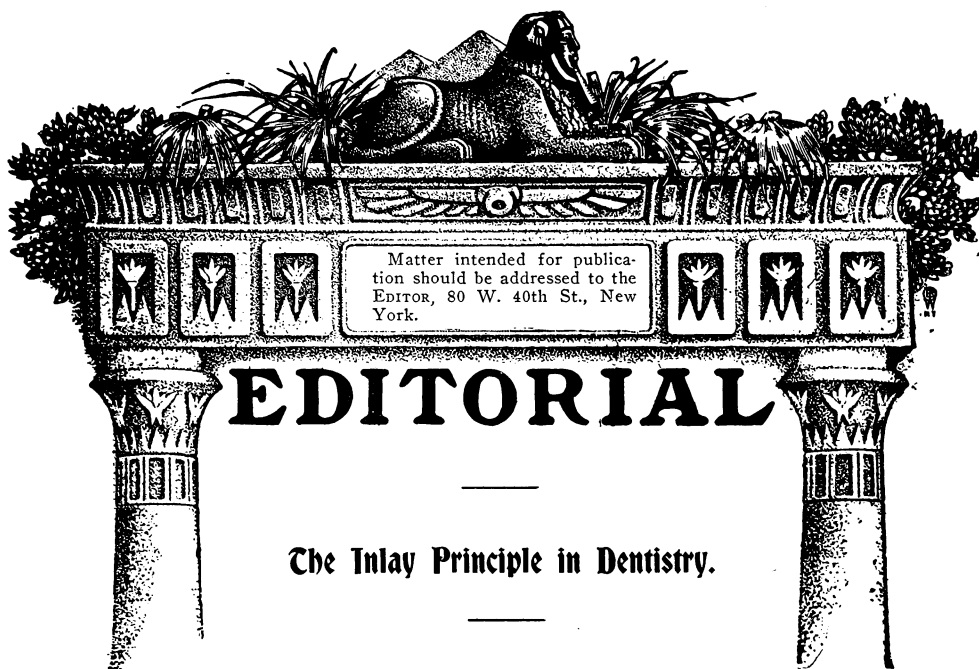
CHARLES A. MEEKER,

Secretary of State Dental Commission of New Jersey.

We feel we have accomplished something in the above; then, according to the Asheville resolution we have labored long and untiringly to secure an interchange with various States of the Union, and are able to report the following States as having signed the agreement: Vermont, Tennessee, Utah, Indiana and Michigan, with a number of States who will take up reciprocity as soon as they can have their laws changed, so that they may interchange legally, and we hope to be able to report a great many more by the next meeting. Pennsylvania has under advisement an interchange of license in accordance with the agreement now existing between New York and New Jersey, and I believe the matter is to be decided this month.

	Receipts	\$1,863.65
Financial	Balance on hand July, 1904.....	825.77
Report.	Expenditures	1,457.07
	Leaving balance to date.....	1,232.35

In this financial report I desire to say we still have a number of bills which have not been paid. We also wish to say all these cases have to be prosecuted out of the funds of the Board, and with the various other expenses of the running of the Board we necessarily have to spend a great deal of money. The amount for counsel fees and court fees and traveling expenses to attend trials for the past year has amounted to \$278.45. Out of this amount the State society appropriated to this fund \$325.00. We have left \$61.55, but the bills unpaid for legal expenses exceed the balance to the legal expense fund. We have a bill to the Supreme Court of \$50.00 and the bill of the private counsel, Mr. Halsey Barrett, which amount has not been rendered, but is estimated at \$100.00.



When the advocates of porcelain inlays first announced the perfection of the method, and invited its adoption by their confrères, the disciples of the gold filling were sceptical. They looked askance at the conspicuous margins around the otherwise beautiful restorations. With seemingly logical contention, they argued: "If caries recurs around the margins of perfect gold fillings, what may we expect when the cement begins to wash out of those already wide-open joints? Time will prove that the inlay is not a tooth-saver, however beautiful it may be temporarily."

But time has passed, and time has proven quite the contrary. The cement does not wash out of the joints to any considerable extent, and caries does not creep in. Moreover, with the passage of time, methods and materials have improved, and the joints are no longer conspicuous.

Yet, of course, even with the most improved methods and materials, the joint between porcelain and tooth is not comparable with the actual margins of a gold filling, so far as can be detected with the eye. How, then, account for the anomaly that we often find recurrent caries about the gold filling, even when made by skilful operators, and so rarely find it around porcelain, even though placed by a bungler? The answer probably lies in the fact that though the joint may seem worse, in truth the actual contact throughout the cavity is better with an inlay than can ever be obtained



with a gold filling. Gold, however skilfully packed, cannot be made to lie as closely against the tooth as cement can be forced against it. Thus, the porcelain inlay must now be counted permanent; not alone permanent as a filling material in a tooth, but permanent as an important feature of dental practice.

Gold Inlays. As men became more and more skilled in the manipulation of porcelain its sphere of usefulness increased, until it has been utilized in cavities in all the teeth of the denture. There is, however, one characteristic of porcelain which eventually will prevent its universal adoption. It is friable. For this reason it has been proven unwise to expose porcelain edges to too great masticatory stress.

Before reaching the logical deduction toward which this argument is progressing, let us contemplate a totally different picture at the very opposite limit of dental practice. The gold shell crown, originally intended as a means of preserving otherwise unsavable molar roots, because of its ready application, has been accorded an unmerited area of utilization. It has been used to cover, not alone crownless roots, but badly broken down teeth, yea, and even teeth not very badly broken down. From replacing a totally lost natural crown it has been used over teeth three-quarters lost—half lost—with only a quarter of the crown missing, and finally over teeth which the dentist has simply been too lazy to fill. As serviceable as the gold crown is, there is one great drawback. The margin of the band, in many mouths, is an offense against the soft tissues, however well fitted, and it rarely is thoroughly well adapted.

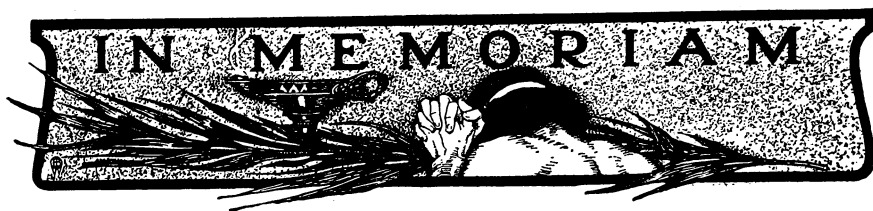
In this dramatic situation enter with a blare of trumpets the gold inlay. It promises to be all that the porcelain inlay, or the gold crown is, and this without the attendant disadvantages. There will be no friable edges, and yet no bands. Moreover, resembling the best gold filling, it yet assures perfectly smooth margins at the gingiva, a requisite not always achieved with the gold filling.

The inlay principle having proven its potency in saving teeth, many skilled minds have been studying methods of making gold inlays so perfect that they may be adopted as a safe reliance. While further improvements will undoubtedly still be made, progress has now advanced to a point where it is safe to prophesy that the gold inlay is already certain to

ITEMS OF INTEREST

be widely adopted in dental practice. From this time forth we venture to believe that the chief attention of dentists will be directed upon this, the latest radical departure in dental practice. We do not mean that the gold filling will be abandoned, nor that porcelain shall lose its popularity. Rather will the gold inlay displace the large amalgam filling and the gold crown. In the restoration of great depredations the quarter, the half, the three-quarters of molars and bicuspid, the reliance will be increasingly upon the gold inlay, properly made, properly contoured and properly inserted. The inlay principle in dentistry must now be carried to its ultimate, and not the least delightful feature of this is that the dread of dental work, in the patient's mind, will be diminished one-half.





George B. Harriman, D.D.S.

Died, at Moosehead, Maine, May 22, 1905, of pneumonia, George B. Harriman, D.D.S., of Boston, Mass.

George B. Harriman was born at Groton, New Hampshire, on March 18, 1837. He received his preliminary education at New Hampshire Institute, studied dentistry under John Clough, M.D., of Boston, in 1857, and entered practice in 1858.

After several years of practice he entered Boston Dental College as a student and graduated in 1870. The next year he was elected Dean of the College, in which capacity he served for two years; later he was chosen as Trustee and remained a member of that Board until after the school was transferred to the Tufts College Corporation.

As a student at the college he became deeply interested in microscopy under Professor Rufus King Brown and for several years was an enthusiastic student in that science, conducting certain important investigations. For a time he was Professor of Histology and Microscopy at the college.

Dr. Harriman was one of the eight graduates who met in one of the lecture rooms of the old college at No. 5 Hamilton Place on March 4, 1872, and founded this association. He was chairman of the executive committee during the first two years of its existence, was president in 1897, again chairman of the executive committee in 1898, and an active member until his death.

For a long time he had suffered from asthma and had gradually withdrawn in part from active practice. Last March he closed his office on Park Street and went to California, returning early in May. It has been his custom for several years to visit the Moosehead region on the opening of the fishing season in the spring; and though urged by friends not to do so this year, he went to Moosehead Lake on May 13, accompanied by Mrs. Harriman. There pneumonia supervened, and he died on the 22d. As has been beautifully said, "The Call of the Wild led him back close to Nature's heart, and with his head on her bosom, he slept."

Dr. Harriman was a prominent Free Mason, a life member of Boston Commandery, an earnest supporter of the First Free Baptist Church of Roxbury, and though he never aspired to salaried political office he was at one time active in Republican politics, serving as a member of the State central committee. He was a man of moderate wealth, of sterling



ITEMS OF INTEREST

character and Christian brotherhood. He leaves a widow, his second wife, and three sons.

In respect to his memory, the "Boston and Tufts Dental Alumni Association" adopted the following resolutions on Oct. 11:

Whereas, The hand of Providence has removed from us our honored member and colleague, Dr. George B. Harriman; and

Whereas, In his decease we have lost one of the founders of our association, who in committee, as president, and as an active member until his death, evinced a warm interest in its welfare; who, as Dean, as Professor, and as Trustee of our Alma Mater gave to her freely of his wisdom; and who in many years of practice set before us a worthy example of fidelity to his patients, of fairness toward his colleagues, and of kindly interest in his younger professional brethren; therefore, be it

Resolved, That we desire to express to the bereaved family our sympathy and sorrow in their affliction, and our admiration for the professional and personal qualities of our colleague; and

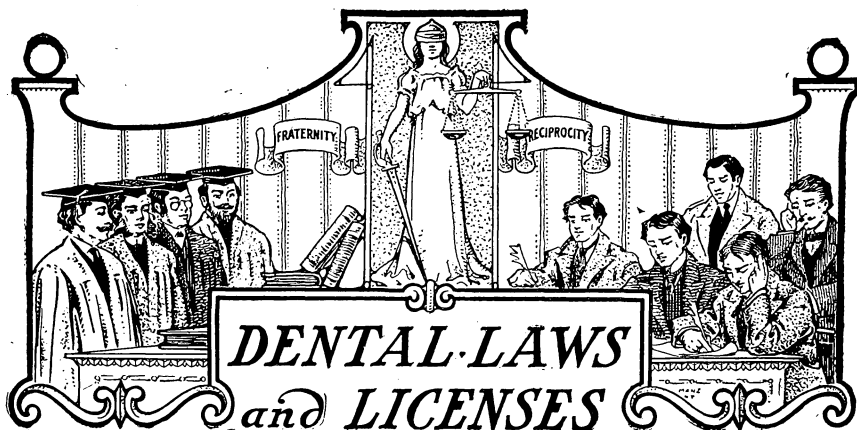
Resolved, That these resolutions be spread upon the records of our association, a copy sent to the family of our departed brother, and others to the dental journals for publication.

FRED'K. S. FOGG,
E. W. BRANIGAN,
JAMES R. PIPER.
Committee.

MARION L. WOODWARD,

Recording Secretary, Boston and Tufts Dental Alumni Association.





Decision of the Court in Wisconsin Case.

Circuit Court, Milwaukee County. (Branch No. 2.)
The State of Wisconsin, ex. rel.

Milwaukee Medical College, Plaintiff, vs. State Board of Dental
Examiners, et al., Defendants.

DECISION OF COURT, SEPTEMBER 18, 1905.

The action of the defendants in declaring relator's Dental Department non-reputable, was taken without any notice to it. The fact that the Board of Dental Examiners may have been about to decide upon the issuance of licenses to graduates is immaterial in connection with position of relator. The resolution of judgment of interdictment against the college, without such notice to it as a party in interest, with valuable and extensive property interests at stake, subject to instant legal demolition by possible arbitrary action, must be held to be void in a proper suit. This must be true where there is no emergency or overweening necessity forbidding notice, and no such necessity existed here. It is believed that this statment of legal principles finds expression and affirmance in the case of *Lowe v. Conroy*, 120 Wis., 151; *State ex rel. Coffey v. Chittenden*, 112 Wis., 569; and *State ex rel. Kellogg v. Currens*, 11 Wis., 431.

Whether certiorari is a proper proceeding to review the action of the Board, depends on the question of whether or not the want of notice to the college is a jurisdictional defect, because such defect alone can be reviewed on certiorari. I cite in this connection the *Milwaukee Iron Company v. Schubert*, 29 Wis., 444; and *State ex rel. v. Losby*, 115 Wis., 574. It is held that failure to take a necessary step in its proceeding, or a departure from well-settled principles of law by a quasi judicial

ITEMS OF INTEREST

body, is a jurisdictional defect and therefore subject to review as such by a proper Court. (See cases *supra*.)

In the case at Bar, want of notice to the college is a jurisdictional defect when complained of by the proper party, which in this case is the college.

A jurisdictional defect appearing on the record of the proceedings of the Board, it is the duty of the Court to grant relator relief appropriate to the proceedings, and that relief is reversal of the conclusions of the Board as embodied in the resolution of June 30, 1905.

In deciding this particular point, gentlemen, the Court does not hold that in all cases where a State Board is passing on the propriety of granting a license to an applicant who is a *graduate of some dental college*, it necessarily follows that the State Board must always stop to give notice to the college in question; but I do hold that where action is taken without such notice, *SUCH BOARD DOES ACT AT ITS PERIL*.

Chapter 411 of the Laws of 1903 is attacked as unconstitutional for various reasons. I am not at the present time convinced on that proposition, and I have yielded to the conceded necessity of an early adjudication of this case, without deciding that question.

(On issues for jury in mandamus case):

The question for special verdict as framed by counsel for plaintiff, will, if occasion arises, be submitted to the jury. It is possible that the question may be obnoxious to the rule generally pursued in framing questions for a special verdict, as embodying more than one subject matter; and if I should come to that conclusion, I would separate the question, before submitting it to the jury.

Mr. Doe: I would like to have the Court enter a stay of execution in the certiorari matter, after service of the notice of entry of judgment, for 60 days, in order that we may prepare a bill of exceptions. I have had some doubts as to whether a bill of exceptions was necessary, but my present opinion is that it is.

Mr. Timlin: I think 60 days is too long.

Mr. Doe: I do not care anything about that.

Mr. Timlin: Make it 30 days, and if necessary extend the time.

Mr. Doe: With that understanding I am satisfied.

Mr. Timlin: I am satisfied no bill of exception is necessary.

Court: Let the order for a stay of 30 days be entered.



States That Interchange.

Arkansas reports no interchange as yet, but Oklahoma reports interchange with Arkansas.

District of Columbia interchanges with New Jersey.

Florida interchanges with States whose laws are equal to Florida's.

Indiana interchanges with New Jersey.

Michigan interchanges with New Jersey and the Canadian Northwest Territories.

New Jersey interchanges with Indiana, Michigan, Tennessee, Utah and Vermont, and by special agreement with New York.

New York interchanges with New Jersey and Pennsylvania.

Oklahoma reports interchange with Arkansas.

Pennsylvania interchanges with New York.

Tennessee interchanges with New Jersey.

Utah interchanges with New Jersey.

Vermont interchanges with New Jersey.

Requirements for Licenses and Dates of Examinations.

Secretaries of State Boards are requested to keep us constantly posted in regard to dates and places of examinations or changes in their laws that this department may be kept up to date.

Alabama. Examination required, with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations annually on the Monday before the second Tuesday in May of each year. Secretary, Dr. Thomas P. Whitby, Selma, Ala.

Arizona. Examination fee \$25. Secretary, Dr. Wm. G. Lentz, Fleming Rock, Phoenix, Ariz.

Arkansas. Examination with or without diploma; applicants must attain an average of 75 per cent to pass. Examination fee \$5. No special examination granted to practitioners already in practice; no temporary licenses. Oklahoma reports interchange with Arkansas, but the secretary of Arkansas reports no interchange as yet. Examination, Little Rock, Ark., November 27-29. Secretary, A. T. McMillan, Fifth and Main streets, Little Rock, Ark.

ITEMS OF INTEREST

California. Examination required with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination Dec. 11 at San Francisco. Secretary, C. A. Herrick, Jackson, Amador Co., Cal.

Colorado. Examination granted to holders of diploma only. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations first Tuesdays of June and December, at Denver. Secretary, Dr. M. S. Fraser, 407 Mack Building, Denver, Colo.

Connecticut. Applicant for examination must have diploma, or must have had five years' instruction from a licensed dentist, or three years' practice as a legally qualified dentist. Examination fee, \$25. Examination, Nov. 8, 9, 10. A special clause permits reciprocal interchange of licenses in accordance with the Asheville resolution. Recorder, G. M. Gilbert, 783 Main street, Hartford, Conn.

Delaware. Examination and diploma required in all cases. Examination fee \$10; \$1 for certificate. All applicants for certificates come under the same conditions. No interchange of license with any other States. Examinations first Wednesdays in January, April, July and October. Place of meeting given when applicant writes for the information. Secretary, C. R. Jeffers, New Century Bldg., Wilmington, Del.

District of Columbia. Examination with or without diploma. Examination fee \$10. Reciprocal interchange of license with the State of New Jersey in accordance with the provisions of the Asheville resolution. Examinations semi-annually. Secretary, Dr. S. G. Davis, 607 13th street, Washington, D. C.

Florida. Examination required with diploma. Examination fee \$10. No special examination for practitioners already in practice. Interchange of license with States whose laws are equal to Florida. Secretary, W. G. Mason, Tampa, Fla.

Idaho. Examination required with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any State. Examination, Dec. 27-29. Secretary, C. E. M. Loux, Pocatello, Idaho.

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Tennessee.

Examination required with or without a diploma. Examination fee \$20. License fee \$5. No special examination required for practitioners already in practice. No interchange of license with any other State. Examinations twice each year, usually in May and October. This year Nov. 14-18. Secretary, Dr. J. G. Reid, 67 Wabash avenue, Chicago, Ill.

Indiana.

Applicants for examination must possess diploma from recognized college or must have had five years' dental practice under a reputable practitioner of this State. Examination fee \$20. No special examination granted to practitioners already in practice. Reciprocal interchange of license with the State of New Jersey in accordance with the provisions of the Asheville resolution. Next examination, Fort Wayne, Jan. 9-11, 1906. Applications must be in hands of secretary by Jan. 5. Secretary, Dr. F. R. Henshaw, Middletown, Ind.

Iowa.

Examination required with diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, Des Moines, Dec. 12-13, 1905, and May 1-2, 1906. Secretary, Dr. E. D. Brower, Le Mars, Ia.

Kansas.

No examination required if applicant has a diploma from a reputable college; otherwise examination required. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, Dr. M. I. Hulst, Hutchinson, Kan.

Kentucky.

Examination required with diploma. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations first Tuesday in June and December in Louisville. Secretary, Dr. C. R. Shacklette, 628 Fourth avenue, Louisville, Ky.

Louisiana.

Examination required with diploma. Examination fee \$25, payable in advance. No special examination granted to practitioners already in practice. No interchange of license with any States—Board has the matter under consideration. Examinations twice annually in New Orleans, first examination on the day following the commencement exercises of the New Orleans College of Dentistry. Second examination occurs on the first Tuesday after the third Monday in October. Secretary, treasurer and attorney, L. A. Hubert, 137 Carondelet street, New Orleans, La.



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Examination required with or without diploma.
Maine. Examination fee \$20. No special examination granted to practitioners already in practice. No interchange of license with any States. Next examination June 27-28, 1906. Secretary, Dr. Dana W. Fellows, Portland, Me.

Examination required with diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Examinations occur twice annually in Baltimore. In 1905 Nov. 6-7. Secretary, F. F. Drew, 701 N. Howard street, Baltimore, Md.

Examination required with or without diploma.
Massachusetts. Examination fee \$20 for first examination, subsequent examinations \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Hereafter candidates for second and subsequent examinations will be required to fill out an application blank and forward it to the secretary as above. Every candidate for examination must be twenty-one years of age. Application blanks may be obtained from the secretary. Temporary licenses are never granted. The fee for third and subsequent examinations is \$5.00. Secretary, Dr. G. E. Mitchell, Haverhill, Mass.

Examination required with or without diploma.
Michigan. Examination fee \$10. Practitioners already in practice may have a special examination before any member of the Board which will enable him to practice until the next regular meeting of the Board, when a regular examination must be taken. Reciprocal interchange of license with New Jersey in accordance with the provisions of the Asheville resolution, and with the Canadian Northwest Territories. Secretary, Dr. C. H. Oakman, 29 State street, Detroit, Mich.

Diploma must be presented from a dental college in good standing or satisfactory evidence must be given of having been engaged in the practice of dentistry as early as April, 1879. Examination fee \$10. No special examination granted to practitioners already in practice, and the Board has no power to grant temporary license of any kind. No interchange of license with any States. Examinations first Tuesday in April and October. Held at Dental Department of the State University at Minneapolis. Secretary, C. H. Robinson, Wabash, Minn.

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Mississippi. Examination required with or without diploma. Examination fee \$10. Practitioners already in practice will be granted an examination by any member of the Board, who is authorized to issue a temporary license which will be valid until the next succeeding meeting of the Board. Only one temporary license shall ever be issued to the same applicant. Examinations third Tuesday in May of each year. Secretary, Dr. P. P. Walker, Brandon, Miss.

Missouri. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations second Tuesday in May and October at the Senate Chamber at Jefferson City. Secretary, S. C. A. Rubey, Clinton, Mo.

Montana. Examination with or without diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, D. J. Wait, Helena, Mont.

Nebraska. Examination required with or without diploma. Examination fee, \$25, except to Nebraska graduates fee is \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Next examination by the State Board will be held at Lincoln, Neb., Nov. 8, 1905. C. F. Ladd, Lincoln, Neb.

Nevada. Examination required of all graduates. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Next examination about Dec. 15. Secretary, C. A. Coffin, Reno, Nev.

New Hampshire. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice except by agreement of the full Board. No interchange of license with any States. Next examination at Manchester, Dec. 12-14. Secretary, A. J. Sawyer, Manchester, N. H.

New Jersey. Applicant must be a graduate of a reputable dental college and hold a high school diploma or a certificate from the State superintendent of public instruction, Professor Baxter, Trenton, N. J. Examination fee, \$25. Reciprocal interchange of license with Utah, Tennessee, Indiana, Michigan and Vermont, in accordance with the provisions of the

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Asheville resolution, and by special agreement with New York. Examinations December 12, 13, 14. Theoretical branches in the Assembly Chamber, Trenton, N. J. Practical operative work at the office of C. S. Stockton, 7 Central avenue, Newark, on a date assigned by him. Practical prosthetic work at the office of Dr. A. Irwin, 425 Cooper street, Camden, N. J., on a date assigned by him. Secretary, Dr. Charles A. Meeker, 29 Fulton street, Newark, N. J.

Examination required with or without diploma.

New Mexico.

Examination fee \$25. Fee for certificate \$5. All licensed dentists within the Territory shall, on or before the first day of June of each year register with the secretary of the board, and shall pay therefor an annual fee of \$3. No special examination granted to practitioners already in practice. No interchange of license with any States. Secretary, C. N. Lord, Santa Fe, N. M.

Diploma from a registered school is necessary

New York.

for admission to the dental licensing examination. Applicants who have had six years' practice in dentistry may on unanimous recommendation of the Board receive a license to practice in this State provided they meet the necessary professional and preliminary requirements. Examination fee \$25. Reciprocal interchange of license with New Jersey and Pennsylvania. Next examination Jan. 30, Feb. 2, 1906. Chief, Charles F. Wheelock. Examinations Division, New York State Education Department, Albany, N. Y.

Examination with or without diploma. Exam-

North Carolina.

ination fee \$10. No special examination granted to practitioners already in practice. Next examination, June, 1906. Secretary, R. H. Jones, Winston-Salem, N. C.

Examination required with or without diploma.

North Dakota.

Examination fee \$10; additional fee for license, \$5. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination, second Tuesday in July. Secretary, H. L. Starling, Fargo, N. D.

The Board will register without examination

Ohio.

all graduates of the Ohio colleges who make proper application and pay the required fee of \$10 prior to the June, 1905, session of the Board; all other applications must be graduates and pass examination before they can practice legally in Ohio. Examination fee \$20; registration fee \$10. There is an exemption clause which permits the Board to register a person who has been in practice in the State of Ohio continuously since January 1, 1903; this must be verified by evidence. Examinations for 1905 will be held November 28, 29, 30, in Columbus. Application should be filed with the secretary 10

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days prior to examination. Secretary, H. C. Brown, 185 East State street, Columbus, Ohio.

Examination required with or without diploma.

Oklahoma. Examination fee \$25. No special examination granted to practitioners already in practice. Reciprocal interchange of license with Arkansas. Next examination Oklahoma City, Nov. 14-15. Secretary, A. C. Hixon, Guthrie, Okla.

Examination required with diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any States. Examination in November in Portland. Secretary, O. D. Ireland, 614 Dekum Building, Portland, Ore.

Examination required with diploma. Examination fee \$15. No special examination granted to practitioners already in practice. Reciprocal interchange of license with New York. Next examination Philadelphia and Pittsburg, Dec. 12-15, 1905. Secretary, C. N. Schaeffer, Harrisburg, Pa.

Examination in all cases. Examination fee \$20.

Rhode Island. No special examination granted to practitioners already in practice. In regard to interchange the Board has recommended an amendment to the law giving the board discretion. Next examination June, 1906. Secretary, W. S. Kenyon, 301 Westminster street, Providence, R. I.

Examination with diploma. Examination fee \$15. No special examination granted to practitioners already in practice. No interchange of license with any States, but is not opposed to a satisfactory plan of exchange. Next examination at White Stone Springs July 13, 1906. Secretary, Dr. B. Rutledge, Florence, S. C.

Applicants for examination must have diploma or must have had three years' practice immediately preceding examination. Examination fee \$10; license fee \$5. No special examination granted to practitioners already in practice. No interchange of license with any State. Next examination at Sioux Falls Jan. 16, 1906, at 1.30 p. m. Secretary, G. W. Collins, Vermillion, S. D.

Registers diploma without examination and examines all others. Examination fee \$5. No special examination granted to practitioners already in practice. Reciprocal interchange of license with New Jersey, in accordance with the provision of the Asheville resolution. Secretary, F. A. Shotwell, Rogersville, Tenn.

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Texas. Registers diplomas and examines all others. Examination fee \$10. Temporary licenses granted to holders of diplomas between meetings of the Board; good until the following meeting. Temporary licenses granted to others after an examination by any member of the Board. Good until the next meeting of the Board. Fee for temporary license \$2. Secretary, C. C. Weaver, Hillsboro, Texas.

Utah. Examination required with or without diploma. Examination fee \$25. No special examinations granted to practitioners already in practice. Reciprocal interchange of license with New Jersey in accordance with the provisions of the Asheville resolution. Examination not yet fixed. Usually April and October. Secretary, H. W. Davis, 511-513 McCormick Block, Salt Lake City, Utah.

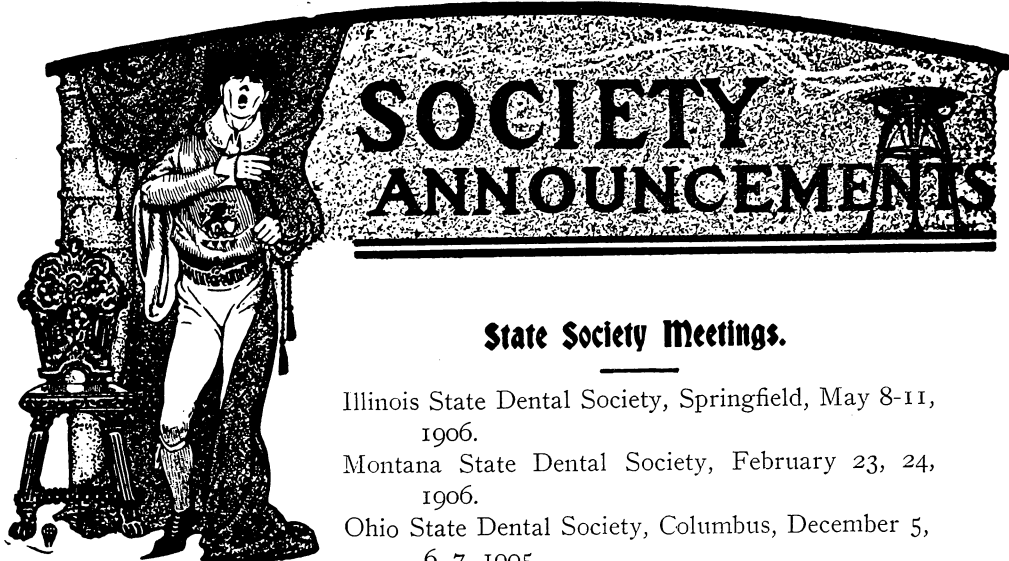
Vermont. Examination required in all cases. Examination fee \$25. No special examination granted to practitioners already in practice. Board is empowered to make interchange of license, in accordance with the Asheville resolution. Interchanges with New Jersey. Secretary, G. F. Cheney, St. Johnsbury, Vt.

Virginia. Examinations required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Next examination in Richmond June 12, 1906. Secretary, R. H. Walker, Norfolk, Va.

Washington. Examination required with diploma. Examination fee \$25. No special examination granted to practitioners already in practice. No interchange of license with any States. Examinations in May and November. In 1905 on November 20. Secretary, C. S. Irwin, Vancouver, Wash.

West Virginia. Examination required with or without diploma. Examination fee \$10. No special examination granted to practitioners already in practice. No interchange of license with any State. Next examination Charleston, W. Va., June 6-8, 1906. Applications should be filed with the secretary by June 1. Application blanks and all necessary information furnished by the secretary. Secretary, H. M. Van Voorhis, Morgantown, W. Va.

Wisconsin. Examination required with diploma. Examination fee \$10. Dentists who have practised for four years or have been apprenticed to a reputable dentist for five years are entitled to examinations. No special examination granted to practitioners already in practice. No interchange of license with any State. Next examination at Milwaukee in January, 1906. Secretary, J. J. Wright, 1218 Welles Building, Milwaukee, Wis.



State Society Meetings.

Illinois State Dental Society, Springfield, May 8-11, 1906.

Montana State Dental Society, February 23, 24, 1906.

Ohio State Dental Society, Columbus, December 5, 6, 7, 1905.

Southern California Dental Association, Los Angeles, November 6, 7, 8, 1905.

Vermont State Dental Society, Brattleboro, May 15, 1906.

Institute of Dental Pedagogics.

The annual meeting of the Institute of Dental Pedagogics will be held in the Fifth Avenue Hotel, New York, December 28, 29 and 30. The following subjects will be discussed: Anesthesia, Extraction, Operative Technic, Prosthetic Technic, Crown and Bridge Technic, Orthodontia Technic, Porcelain Technic, Chemistry, Anatomy and Oral Surgery, Teaching in the Infirmary.

The main idea of the meeting will be "How should these subjects be presented to a dental student." This will be the most important dental meeting of the year, especially for teachers. As far as possible every demonstrator, as well as the professors, should make an effort to be present.

W. E. WILLMOTT, Secretary.

Central Dental Association of Northern New Jersey.

The annual symposium of the Central Dental Association of New Jersey occurs during the coming February, and the society will take a new departure. In view of the fact that the annual banquets have always been overcrowded, they have secured the breakfast room of the New York Athletic Club for the evening of February 19, 1906, and the acceptances will be limited to the capacity of hall, by ticket only, in the order of receipt. The toasts will be answered by men eminent in the profession.



California State Board of Dental Examiners.

The next examination of the State Board of Dental Examiners will be held in San Francisco, beginning December 11, 1905. The place for holding the examination will be the College of Physicians and Surgeons. All applications must be filed with the secretary by December 4.

C. A. HERRICK,
Secretary Board of Dental Examiners.

Iowa State Board of Dental Examiners.

The Iowa State Board of Dental Examiners will meet for the examination of candidates on December 12-13, 1905, at the Capitol, Des Moines, at 9 a. m. For application blanks and all information apply to

E. D. BROWER, Secretary,
LeMars, Ia.

Ohio State Dental Society.

The fortieth annual meeting of the Ohio State Dental Society will be held in the Great Southern Hotel, Columbus, Ohio, December 5, 6, and 7, 1905. An exceptionally strong programme of papers and clinics has been provided, and we have every assurance of a highly successful meeting. Come!

F. R. CHAPMAN, Secretary,
305 Schults Building, Columbus, O.

Fifth District Dental Society of the State of New York.

The Fifth District Dental Society of the State of New York will hold its semi-annual meeting at Rome, N. Y., on November 14 and 15.

W. H. LEAK, D.D.S.,
Watertown, N. Y.

Maine Dental Society.

The Maine Dental Society will meet in Portland for its fortieth annual meeting on July 18, 19, 20.

Portland, Me. DR. H. A. KELLY, Secretary.



The National Association of Dental Examiners.

At the meeting of the National Association of Dental Examiners, held at Buffalo, N. Y., July 24-25, the following officers were elected: President, H. W. Campbell, D.D.S., Suffolk, Va.; Secretary and Treasurer, Charles A. Meeker, D.D.S., Newark, N. J.; Vice-Presidents from the West, F. O. Hetrick, D.D.S., Ottawa, Kan.; from the South, F. A. Shotwell, D.D.S., Rogersville, Tenn.; from the East, George E. Mitchell, D.D.S., Haverhill, Mass. Committee on Colleges—J. G. Reid, D.D.S., Chairman, 1204 Trude Building, Chicago, Ill.; George E. Mitchell, D.D.S., Haverhill, Mass.; J. J. Wright, D.D.S., Milwaukee, Wis. Committee on Conference—J. F. Dowsley, D.D.S., Chairman, Boston, Mass.; F. O. Hetrick, D.D.S., Ottawa, Kan.; R. H. Walker, D.D.S., Norfolk, Va. Membership Committee—M. F. Finley, D.D.S., Chairman, Washington, D. C.; Thomas Cole, D.D.S., Newman, Ga.; C. R. Taylor, D.D.S., Streator, Ill. State Advisory Committee—Henry Barnes, M.D., Cleveland, O.; George E. Mitchell, D.D.S., Haverhill, Mass.; E. P. Dameron, D.D.S., St. Louis, Mo.; C. H. Oakman, D.D.S., Detroit, Mich.; W. G. Mason, D.D.S., Tampa, Fla. Committee for Promoting Relations with Foreign Examiners—T. J. Barrett, D.D.S., Chairman, Worcester, Mass.; F. A. Shotwell, D.D.S., Rogersville, Tenn.; F. C. James, D.D.S., Winona, Minn.; C. Stanley Smith, D.D.S., Cincinnati, O. Committee on Resolutions—H. C. Brown, D.D.S., Columbus, O.; C. S. Stockton, D.D.S., Newark, N. J.; F. F. Drew, D.D.S., Baltimore, Md. Committee on Contracts—Charles A. Meeker, D.D.S., Newark, N. J. Committee on Tabulation of Examiners' Reports of Examinations—Alphonso Irwin, D.D.S., Camden, N. J.

Oklahoma Board of Dental Examiners.

There will be a meeting of the Oklahoma Board of Dental Examiners, held at Oklahoma City, Tuesday and Wednesday, November 14 and 15, 1905, for the examination of candidates. Oklahoma has a new dental law that became operative June 1, 1905, that requires all applicants for registration, whether graduates or not, to take the examination. It is to be theoretical and practical in character, and instruments for operative and prosthetic work must be furnished by the applicant. Examination fee is \$25.00. Further information given by the secretary, as well as blanks furnished upon application.

A. C. HIXON, *Secretary.*

Guthrie, Okla.



Illinois State Board of Dental Examiners.

The regular annual meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the State of Illinois will be held in Chicago, commencing Tuesday, November 14 to 18, inclusive.

Persons in possession of the following requirements will be eligible to take the examination: First—"All persons who have been engaged in the actual, legal and lawful practice of dentistry or dental surgery in some other State or country for five consecutive years just prior to application; second, or is a graduate of and has a diploma from the faculty of a reputable dental college, school or dental department of a reputable university; third, or is a graduate of and has a diploma from the faculty of a reputable medical college or medical department of a reputable university, and possesses the necessary qualifications prescribed by the Board."

Candidates will be furnished with proper blanks and such other information as is necessary upon application to the secretary. All applications must be filed with the secretary five days prior to the date of examination.

Address all communications to

J. G. REID, D.D.S., *Secretary*,
1204 Trude Building, Chicago, Ill.

Dental Commissioners of Connecticut.

The Dental Commissioners of the State of Connecticut hereby give notice that they will meet at Hartford on Wednesday, Thursday and Friday, November 8, 9 and 10, 1905, to examine applicants for license to practice dentistry and for the transaction of any other business proper to come before said meeting.

Practical examination in operative and prosthetic dentistry will be held Wednesday, November 8. The written theoretical examination will be held Thursday and Friday, November 9 and 10.

All applicants should apply to the Recorder for proper blanks and rules for conducting the examination. Application blanks must be filled in and sworn to, and with fee, filed with the Recorder on or before November 1, 1905.

By direction of the Dental Commissioners.

GILBERT M. GRISWOLD, *Recorder*,
783 Main street, Hartford, Conn.



New York College of Dentistry, Class of '97.

There is to be a dinner of the class of '97 of the N. Y. C. D. the third Saturday in November. Please communicate for particulars with

DR. Z. P. FULLER,
110 So. Elliott Place, Brooklyn, N. Y.

First Annual Clinic of the Fraternal Dental Society of St. Louis. November 20th and 21st at the Barnes Dental College.

Special features of the meeting will be a series of lectures on "Cavity Preparation," "Methods and Principles of Packing Gold," "Methods and Principles of Finishing Fillings," by Dr. E. K. Wedelstaedt, of St. Paul.

The following well-known members of the Black and Wedelstaedt clubs will be present and clinically demonstrate "extension for prevention" to its fullest extent. Drs. A. C. Searl, Owatonna, Minn.; J. F. Wallace, Canton, Mo.; C. W. Booth, Cedar Rapids, Ia.; J. J. Booth, Marion, Ia.; Wm. Finn, Cedar Rapids, Ia.; J. B. Pherrin, Central City, Ia.; Ed. S. Brown, Edina, Mo.; W. T. Rutledge, Monroe City, Mo.; S. E. Wallace, La Belle, Mo.

PORCELAIN WORK

will be fully demonstrated by Drs. F. E. Roach, Chicago; W. L. Ellerbeck, Salt Lake City; Geo. T. Banzett, Chicago; W. H. Cudworth, Milwaukee, and Craig W. Work, Ottumwa, Ia. Other clinics on various subjects will be given by Drs. W. L. Reed, Mexico, Mo.; J. B. Howell, Paducah, Ky.; C. L. Rose, Fargo, N. D.; F. B. Lawrence, Eldorado, Kan.; Geo. D. Sitherwood, Bloomington, Ill.; A. Gaiser, Davenport, Ia.; Fred Westerfield, St. Charles, Mo.; Otto J. Fruth, St. Louis; Richard Summa, St. Louis, and others.

EXHIBITS.

The following dealers have signified their intention to be present and display: S. S. White Dental Manufacturing Company; Dr. Jenkins, porcelains; Klewe & Co., A. C. Clark & Co., St. Louis Dental Manufacturing Company, John Nolde Dental Manufacturing Company, Hisey Dental Manufacturing Company; Denthol Chemical Company, Lambert Pharmaceutical Company, Lee S. Smith & Sons, Century Dental Laboratory Company, W. M. Berry Dental Laboratory Company, R. C. Brophy & Co., Keeton Williams Gold Company, Horlicks Food Company, Kress & Owens, Oakland Chemical Company, McKesson & Robbins and others.

ITEMS OF INTEREST

RAILROAD RATES.

The Western Passenger Association and Southwestern Excursion Bureau have granted a rate of *one and one-third* fare, plus 25 cents validation fee, *certificate plan*, for this meeting for the States of Missouri, Iowa, Minnesota, Kansas, Nebraska and Illinois on and west of the line of the Chicago and East Illinois Railroad.

HOTEL HEADQUARTERS

at Hotel Jefferson, Twelfth and Locust streets. Rooms, without bath, \$1.50 and up; with bath, \$2.50 and up, for two persons in one room, without bath, \$1.00 each and up; for two persons in one room, with bath, \$1.50 each and up.

Exhibit space may be obtained by application to the secretary. If you have a clinic to give, send your name at once to the Supervisor of Clinics. A cordial invitation is extended to the profession to be present and assist in making this meeting limited in scope, but limitless in importance, the best ever held in this section.

D. O. M. LeCRON,

Supervisor of Clinics, Missouri Trust Building.

S. H. VOYLES,

Secretary, 306 Humboldt Building.

BURTON LEE THORPE,

President.

Ohio State Board of Dental Examiners.

The regular semi-annual meeting of the Ohio State Board of Dental Examiners will be held in Columbus, November 28, 29 and 30, 1905, at the Hartman Hotel. Applications for examination should be filed with the secretary by November 18. For further information address

H. C. BROWN, *Secretary*.

185 E. State street, Columbus, O.